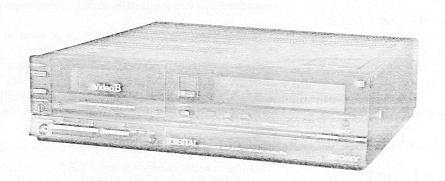
# 

# SERVICE MANUAL



AEP Model UK Model

A110

September, 1986

DIBITAL Video 8

#### SPECIFICATIONS

#### System

Video recording system

Rotary two-heads,

Helical scanning FM system

Audio recording system

Normal recording

Standard: Rotary head, FM system (monaural)

PCM: PCM system (2 channels)

MULTI PCM recording

PCM system (2 channels, 6

tracks)

Video signal AEP MODEL: CCIR system B, G and

H, PAL colour

UK MODEL: British TV standards,

PAL colour

Usable cassettes 8 mm video format cassette

Tape speed SP: Approx. 20.051 mm/sec.

LP: Approx. 10.058 mm/sec.

Recording or playback time

SP: 1hr. 30 min., LP: 3hr. (P5-90)

Fast forward time

Approx. 3 min. (P5-90)

PCM, MULTI PCM

Sampling frequency

31.25 kHz

Audio frequency 20 Hz-15 kHz

Dynamic range 88dB Wow and flutter Less

Less than 0.005% RMS

Tuner section

Channel coverage

AEP MODEL

VHF E2-U10

UHF 21-69

UK MODEL

UHF B21-68

Programming system

30 programme memories

RF output signal UHF channels E30/B30 to E39/B39

(variable), 75 ohms, unbalanced

Aerial input 75-ohm, asymmetrical serial socket

- Continued on next page -







Inputs and outputs

Video input EUROCONNECTOR: 21-pin (pin 20)

1 V (p-p), 75 ohms, unbalanced,

sync negative

Video output EUROCONNETOR: 21-pin (pin 19)

1 V (p-p), 75 ohms, unbalanced,

sync negative

Audio inputs EUROCONNECTOR: 21-pin (pins 2

and 6)

More than 10 kilohms, -6 dBs

AUDIO IN: phono jack 47 kilohms, -10 dBs (0 dBs = 0.775 V rms)

Audio outputs EUROCONNECTOR: 21-pin (pins 1

and 3)

Output impedance less than 1

kilohms

-6 dBs with 10 kilohms load,

unbalanced

AUDIO OUT: phono jack

Output impedance less than

1 kilohms

-10 dBs with 47 kilohms load,

unbalanced

Timer

Clock Time indication

Timer setting

Crystal lock 24-hour cycle Only for recording

6 events/3 weeks max, adjustable for any day or for all 7 days of the

week

General

Power requirements

AEP MODEL: 220 V ac, 50Hz UK MODEL: 240 V ac, 50Hz

Power consumption

AEP MODEL: 44 W UK MODEL: 40 W

Operating temperature

5°C to 40°C (41°F to 104°F)

Storage temperature

-20°C to +60°C (-4°F to + 140°F)

**Dimensions** 

Weight

Approx.  $355 \times 95 \times 344$  mm (w/h/d)

 $(14 \times 3^{3}/_{4} \times 13^{5}/_{8} \text{ in.})$ 

incl. projecting parts and controls

Approx. 7.3 kg (16 lb 2 oz)

Accessories supplied

75-ohm coaxial cable for TV connection (1), Connecting cord RK-74H (1), Screwdriver (1), Remote Commander RMT-405 (1), Batteries IEC designation R6 (2)

Whilst the information given is true at time of printing, small production changes in the course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

Note

This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

Optional connecting cables

VMC-2121CE (21 pin connector to 21 pin connector), VMC-2106S (21 pin connector to 6 phono plugs), VMC-2104MS (21 pin connector to 4 phono plugs)

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK 

ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

#### SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

- Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
- Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
- 3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
- Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
- 5. Check the B+ voltage to see it is at the values specified.

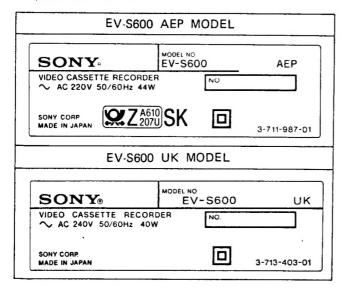
This service manual covers the EV-S600 AEP and UK models. The differences between the models are shown below.

	AEP MODEL	UK MODEL
Operating voltage	220V ac	240V ac
Channel coverage	VHF E2-U10 UHF 21-69	UHF B21-B68
Television system	CCIR system B, G, H	British TV stan- dards
AC power cord (mains lead) plug	Provided	Not provided
STEREO/MONO switch	Provided	Not provided

Please refer to the illustration corresponding to the letter code indicated in the instructions.

#### MODEL IDENTIFICATION

- Specification Label -



#### WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

# FOR THE CUSTOMERS IN THE UNITED KINGDOM

#### **IMPORTANT**

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

This unit uses 8mm video format cassettes.

It records in the SP mode (approximately 20.051mm/ second) and the LP mode (approximately 10.058mm/ second) and can play back in the SP mode and the LP mode.

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# SECTION 1 GENERAL

#### 1-1. PRECAUTIONS

#### On safety

- Before operating, check that the operating power voltage and frequency of the unit are identical with those of your local power supply.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the mains outlet if it is not to be used for an extended period of time. To disconnect the lead, pull it out by the plug. Never pull the lead itself.
- The unit is not disconnected from the mains (ac power source) as long as it is connected to the mains outlet, even if the unit itself has been turned off.

#### On installation

- Allow adequate air circulation to prevent internal heat build-up. Do not cover the holes on the top panel.
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The unit is designed for operation in a horizontal position. Do not install it in an inclined position.
- Keep the unit and cassette tapes away from equipment with strong magnets, as for example a microwave oven or a large loudspeaker.
- Do not place any heavy object (over 13 kg or 28 lbs 10 oz) on the unit.
  - Never place any object on the tuning compartment nor on the top of the front panel.

#### On operation

- When the unit is not in use, turn the power off to conserve energy and to extend its useful life.
- Remove and store video cassettes after recording or playback.

#### On cleaning

Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution.

Do not use any type of solvent, such as alcohol or benzine which might damage the finish.

#### On repacking

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

#### On cassette care

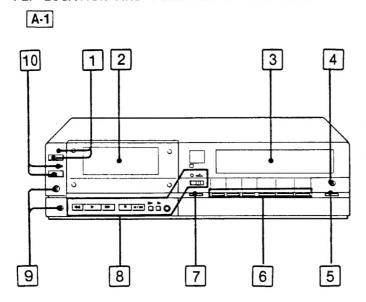
Store cassettes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.

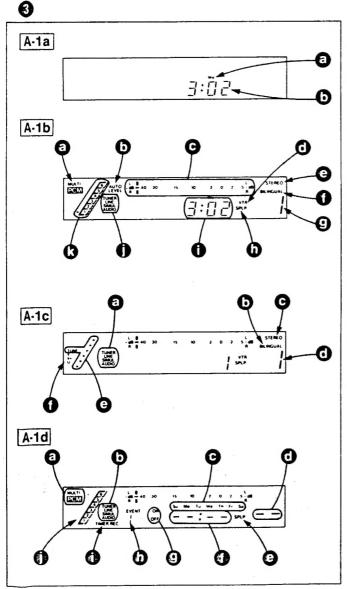
#### On colour broadcasting systems

This machine is designed to record and playback using the PAL colour system. Recording and playback of video sources based on other colour systems cannot be guaranteed.

If you have any questions about this unit, contact your Sony dealer.

#### 1-2. LOCATION AND FUNCTION OF CONTROLS





#### **Front**

A-1

1 ON/STANDBY switch and lamp [p. 14]

Press to turn the power on. The lamp lights up. To turn the unit off, press the switch again.

2 Cassette compartment [p. 16]

Press the **\Delta** button to open.

3 Display window.

When the power is turned off (but the mains lead is connected) A-1a

- a Day of week
- Time

The display "0:00" blinks before you adjust the time display.

#### When the power is turned on A-1b

- MULTI PCM indicator
- AUTO LEVEL indicator
- @ Peak level meter
- VTR mode
- STEREO indicator
- BILINGUAL indicator
- Programme number
- n Recording mode SP or LP
- Current time
- Input indicator
- @ Track of the MULTI PCM recording

#### When a programme is preset [p. 15] A-1c

- Input indicator
- BILINGUAL indicator
- **G** STEREO indicator
- Programme position
- Tuning indicator
- Band indicator

●EV-S600 AEP MODEL	●EV-S600 UK MODEL
VL: Channels E2-4 and S1-3 VH: Channels M1-10, E5-12 and U1-10 U: Channels E21-69	U: Channels B21-68

#### When the timer is set [p. 23] A-1d

- MULTI PCM indicator
- 6 Input indicator
- O Day of week
- Programme position
- Recording mode SP or LP
- Timer indication
- @ Turn-on/off time
- ♠ Event number
- **1** TIMER REC indicator
- ♠ Track of the MULTI PCM recording

#### 4 QUICK TIMER button [p. 26]

Press to start a timer recording immediately. The recording timer can be set in 30-minute intervals, from 0:30 to 5:00.

Press this button as many times as required until the desired recording time is displayed.

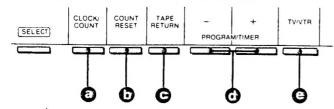
#### 5 TIMER REC ON/OFF button [p. 24, 25, 27]

Press to set the recorder in the timer recording standby mode. The TIMER REC indicator will light up in the display window. To turn on the power again, or to stop a timer recording, press this button again.

#### 6 Function buttons

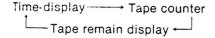
#### When the power is turned on,

button 1 through 1 function as follows:



#### O CLOCK/COUNT button [p. 18, 22]

Press to change the display in the display window. Each time the button is pressed, the display changes as shown below.



#### O COUNT RESET button [p. 22]

Press to reset counter to "0000".

#### G TAPE RETURN button [p. 21]

Press this button in the stop mode to return the tape around the "0000" point on the counter.

#### • +/- PROGRAM/TIMER button [p. 17, 24]

Press to change the programme or the multi track, to adjust the time and to preset the timer recording time.

Press the + and - buttons simultaneously to erase the contents of a timer programme or to release the timer mode display.

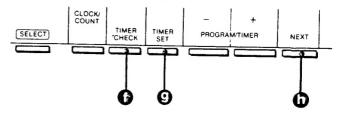
#### TV/VTR select button [p. 17]

If your TV is equipped with a 21-pin SCART or PERI-TV connector which can accept the control signal from the EV-S600, this button is operable. To view the picture received or recorded on your VTR, press this button so that the "VTR" indicator is displayed. (When the > button is pressed, the "VTR" mode is selected automatically.)

To watch one TV programme while recording another, turn off the indicator, and set the TV to the TV mode and select the programme on the TV.

# When the SELECT button is pressed after the power is turned on,

button () through () function as follows:



#### TIMER CHECK button [p. 24]

Press to check the contents of a timer programme.

#### TIMER SET button [p. 23]

Press to set the timer for recording.

#### O NEXT button [p. 14, 23]

Press to move the next item to be set.

#### 7 SELECT button [p. 23]

Press to switch the function of buttons (), (9) and (b).

#### 8 Tape transport buttons and switch

- (rewind) button: Press to rewind the tape. Pressing this button during playback enables you to see a high-speed playback in reverse.
- ▶ (play) button: Press to play a tape back. When the ◀ button is pressed at the same time as this button, the tape will be automatically played back after it has been completely rewound.
- ➤ (fast-forward) button: Press to advance the tape rapidly. Pressing this button during playback enables you to see a high-speed playback.
- (stop) button: Press to stop the tape.
- III/►I (pause) button: Press to stop the tape for a moment during recording or playback. A still picture is obtained during playback.

Press again to release the pause mode.

- (step) button: Press to view a step-by-step playback picture in the playback pause mode.
- (slow) button: press to view a 1/5-speed p lay-back picture. To resume normal playback, press the ▶ button again and then press the ▶ button.
- x2 (double-speed) button: Press during playback to view a double-speed playback picture.

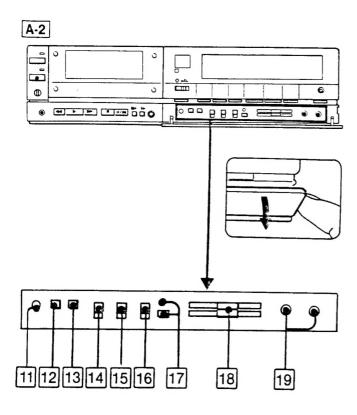
Press again to resume normal playback.

RECORD switch: Slide to the right to start recording. While a recording is being made, the lamp lg hts up.

# HEADPHONES jack (stereo minijack) and PHO NE LEVEL control

#### 

When the power is on, press to open the case te compartment or to eject a cassette. The lamp ill<sub>ir</sub>ninates.



A-2

#### Inside the front compartment

### 11 CLOCK SET button [p. 14]

Press to set the timer.

#### 12 INPUT SELECT button [p. 15, 19]

Press to display the desired input signal indication in the window.

TUNER: To record TV programmes.

LINE: To record the audio/video signals from the EURQCONNECTOR on the rear panel.

**SIMUL:** To record TV programmes and the singlas from the AUDIO IN jacks.

AUDIO: To record the signals from the AUDIO IN jacks.

#### 13 Recording mode (SP/LP) selector [p. 17]

This selects the recording speed, SP or LP. The recording time of any given cassette in the LP mode is 2 times that in the SP mode.

The playback speed is automatically set regardless of the setting of this selector.

#### 14 AUDIO MONITOR (PCM/MIX/STD) selector [p. 22]

Set this switch to the appropriate position when playing back a tape.

PCM (AUTO): To play back the sound on the PCM track. When nothing is recorded on the PCM track, the sound recorded on the standard track is played back regardless of the position of this selector.

MIX: To play back the sound on the PCM and standard tracks simultaneously.

STD: To play back the sound on the standard track.

#### 15 AUDIO MONITOR (MAIN/SUB/MS) selector [p. 22]

Set to play back a bilingual tape. A stereo tape with a pilot signal (the STEREO lamp lights) is played back in the stereo mode regardless of the position of this selector.

MAIN: To listen to the main language.

SUB: To listen to the sub language

**M/S:** To listen to the main language from the left speaker and the sub language from the right speaker.

#### 16 PCM MODE selector

Select the method of recording of the audio signal.

NORM (Normal): For normal recording on the PCM track.

- P (Parallel): For timer recording from the beginning of each track.
- S (Series): For continuous timer recording in one of six tracks.

To play back a tape, set as follows.

NORM: To view a playback picture.

- P: To monitor a MULTI PCM tape recorded on this unit.
- S: If there is no sound when a MULTI PCM tape recorded on another recorder is played back.

#### 17 AUDIO DUB button and lamp

Press during the playback pause mode to record music or commentary on the PCM track of any recorded video tape.

Set the PCM mode selector to NORM.

#### 18 RECORDING LEVEL controls [p. 28]

Slide to adjust the recording level of the PCM recording.

Usualy set the upper control to the "AUTO" (left end) position to adjust both left and right channels simultaneously. When you record sound from other audio equipment, adjust both controls manually to get the optimum result.

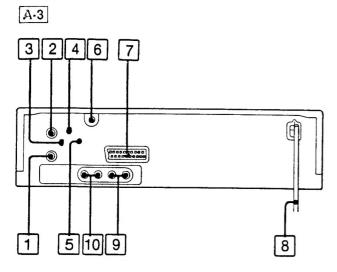
#### 19 Microphone jacks (stereo minijack)

Connect a microphone equipped with a stereo miniplug.

Select the LINE or AUDIO input with the INPUT SELECT button.

# Connection of the microphone and the track to be recorded

Track	PCM	Standard	
Microphone jack	L channel	R channel	track
L	Microphone sound	Microphone sound	Microphone sound
R	L sound of the con- nected euip- ment	Microphone sound	1 and 2
L and R	Microphone sound of the L jack	Micro- phone sound of the R jack	● and ②



Rear A-3

#### 1 AERIAL OUT socket [p. 11]

Connect the aerial input of the TV receiver using the supplied cable.

#### 2 AERIAL IN socket [p. 11]

Connect the aerial cable.

#### 3 LOCAL/DX switch [p. 12]

Normally set this switch to DX. If the TV signal is very strong, set the switch to LOCAL.

#### 4 TEST SIGNAL switch [p. 13]

Set to ON to obtain a test pattern.

#### 5 RF CHANNEL screw [p. 13]

If there is interference on the factory-preset channel for RF output and the output signal from this unit cannot be displayed clearly on the TV screen, adjust the screw with the supplied screwdriver.

#### 6 CONTROL S IN jack (mini jack)

Connect to the equipment supplied with the control S output jack such as the Sony RM-E100V video editing controller. To connect the equipment, remove the cap.

#### 7 EUROCONNECTOR (21-pin) [p. 11]

Connect to the 21-pin connector of a video cassette recorder or a TV/monitor, or to the audio/video input and/or output of these units with an appropriate connecting cable.

#### 8 AC power cord (mains lead)

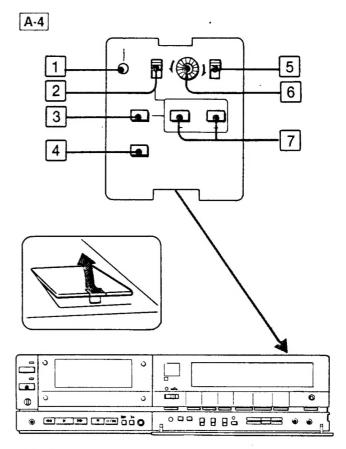
Connect to an ac (mains) outlet.

#### 9 AUDIO OUT jacks (phono type) [p. 13]

Connect to the audio input jacks of a stereo amplifier, TV, video cassette recorder, etc.

#### 10 AUDIO IN jacks (phono type) [p. 13]

Connect to the audio output jacks of a stereo amplifier, video cassette recorder, etc.



A-4

#### **Tuning compartment**

#### 1 STILL ADJ (adjustment) control [p. 20]

Turn with the supplied screwdriver to stabilize the still picture. This control needs to be adjusted only once.

#### 2 AFT switch [p. 15]

Normally set to ON. The automatic fine tuning circuit locks in and maintains a sharp picture.

#### 3 SEARCH ON/OFF button [p. 15]

Press as the first step in presetting programmes. After presetting, press again.

#### 4 CLEAR button [p. 15]

Press to clear the preset station.

# 5 AUTO STEREO ON/OFF (MONO) selector (AEP MODEL only) [p. 15]

Normally set to ON. During a stereo broadcast, the mode is automatically set to stereo. If there is too much interference, set the switch to OFF in which case all the TV programmes will be received in monaural.

#### 6 SHARPNESS control [p. 20]

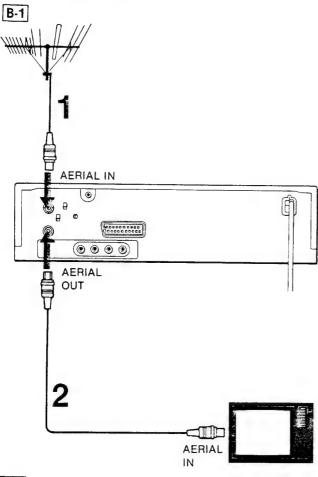
Adjust the sharpness of the picture if necessary. Usually set the control at the centre detent position.

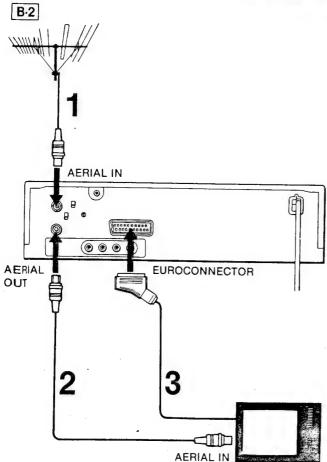
#### 7 TUNING buttons [p. 15]

When the SEARCH ON/OFF button is set to ON, press to tune in a station to be preset.

Press the – button to get a station of lower frequency and the + button to get a station of higher frequency. When the SEARCH ON/OFF button and the AFT switch are set to OFF, press to fine tune the station.

#### 1-3. CONNECTIONS





#### **Notes**

- Unplug each unit from the mains outlet before making the following connections.
- Make sure the connections are secure. A loose connection may cause a noisy picture.

#### CONNECTING A TV

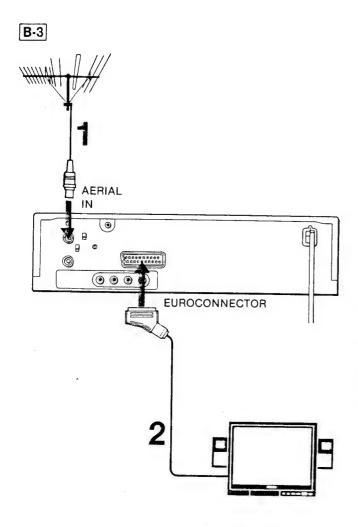
If you connect a TV without audio/video inputs B-1

- 1 Remove the aerial cable form its socket on the TV.
  Then connect the aerial cable to the AERIAL IN socket on the recorder.
- 2 Connect the aerial input of the TV to the AERIAL OUT socket on the recorder, using the supplied cable.

If you connect a TV having audio/video inputs B-2

- 1 Remove the aerial cable from its socket on the TV. Then connect the aerial cable to the AERIAL IN socket on the recorder.
- 2 Connect the aerial input of the TV to the AERIAL OUT socket on the recorder, using the supplied cable.
- 3 Connect the EUROCONNECTOR of the recorder to the audio/video inputs (VIDEO/AUDIO IN, MULTI IN, or 21-pin SCART or PERI-TV) on the TV using an appropriate cable. This connection provides betterquality playback poicture and sound.

Now the recorder is set up to intercept all signals from the aerial on their way to the TV. The recorder then passes on the signals to the TV. This is why you can record a programme while it is being shown on the TV, or while the TV is showing another programme, or even when the TV is turned off.



If you connect a colour monitor having audio/video inputs 8-3

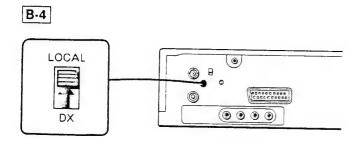
- 1 Connect a aerial cable to the AERIAL IN socket on the recorder.
- 2 Connect the EUROCONNECTOR on the recorder to the audio/video inputs (VIDEO/AUDIO IN, MULTI IN, or 21-pin SCART or PERI-TV) on the monitor using an appropriate cable.

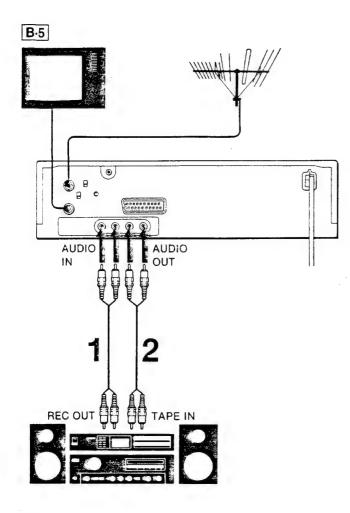
**Note:** To use the Sony KX-series colour monitor, connect the recorder to the BNC-type VIDEO IN and phonotype AUDIO IN connectors on the monitor.

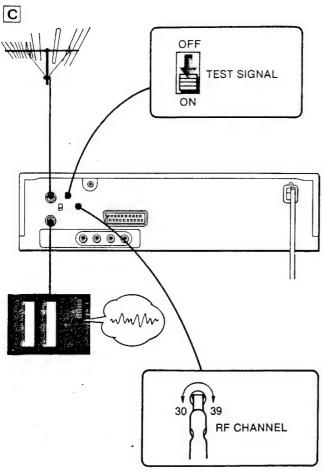
#### Notice on connection with a colour monitor

Connection between the recorder AERIAL OUT socket and the colour monitor is not possible since the monitor is not equipped with a tuner. For this reason, you cannot watch a TV programme while recording another programme on the recorder.

Notice for customers in a strong signal area B-4 The recorder has booster to assure stable TV reception. However, in areas near TV stations, where the TV signal is very strong, the picture may be affected by the booster. If this happens, set the DX/LOCAL switch on the rear panel to LOCAL.







#### CONNECTING AN AUDIO SYSTEM B-5

You can enjoy playback of tapes recorded in stereo or record an audio source such as an FM tuner or CD player, when the recorder is connected to your audio system.

- 1 Connect the AUDIO IN jacks of the EV-S600 to the REC OUT jacks of a stereo amplifier.
- 2 Connect the AUDIO OUT jacks of the EV-S600 to the TAPE IN jacks of a stereo amplifier.

#### Notes

- If the VTR is installed near a tuner or a radio, noise may be heard in AM reception. In this case, keep the VTR away from the tuner or the radio, adjust the AM bar antenna for minimum noise, or connect an external AM antenna to the tuner.
- Because the CD player reproduces the sound with a wide dynamic range, adjust the volume carefully not so as to damage your speaker system.
- Before connecting or disconneting the mains lead of the VTR, be sure to turn the connected amplifier off.

#### 1-4. ADJUSTING THE TV C

One of the television programme positions must be adjusted to receive the signal from the recorder.

Note that the adjustment is not necessary, however, when the EV-S600 is connected to the AUDIO/VIDEO inputs on the TV/monitor.

- 1 After making the connections, press the ON/ STANDBY button.
- 2 Make sure that the recorder is in the stop mode and the TV is in TV mode.
- 3 Set the TEST SIGNAL switch at the rear of the recorder to ON. The test signal is transmitted on a channel between UHF channels 30 and 39.
- 4 Turn on the TV and select a programme position which is not being used to receive a TV station. Tune the channel until you see a clear black and white pattern on the TV screen and you hear a continuous tone. This is the recorder's test signal.

If the test picture is free of disturbance, the TV adjustment is complete. Set the TEST SIGNAL switch of OFF.

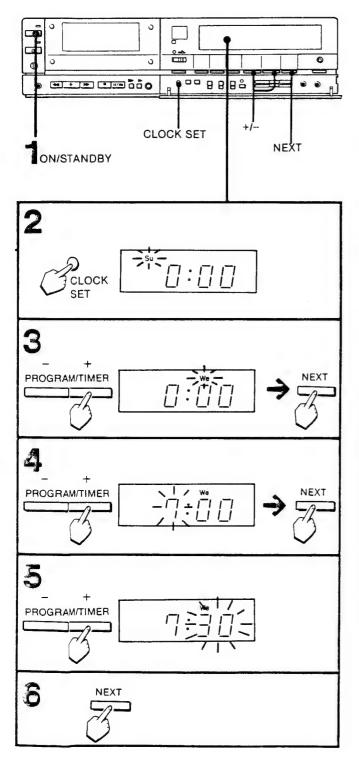
#### If the test picture is not free of disturbance

- 1 Reset the TEST SIGNAL switch to OFF.
- 2 Adjust the channel of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound heard.
- 3 Set the TEST SIGNAL switch to ON again.
- 4 Slowly turn the RF CHANNEL screw on the back of the recorder with the supplied screwdriver, until you see an undistorted test pattern on the TV screen.
- 5 Now the TV adjustment is complete. Reset the TEST SIGNAL switch to OFF.

If you are not sure how to adjust your TV, pleas refer to the TV's instruction manual or consult your deler.

#### 1-5. SETTING THE CLOCK





When you connect the mains lead to a mains outlet, the clock in the display window indicates "Su 0:00" to show that it is ready to be set.

#### Time indication

0:00 = midnight 12:00 = noon

#### Day indication

Su = Sunday Mo = Monday Tu = Tuesday We = Wednesday Th = Thursday Fr = Friday Sa = Saturday

#### Example: To set for Wednesday morning at 7:30 D

- 1 Turn on the power.
- 2 Press the CLOCK SET button.
- 3 Set the day by pressing the + or button and press the NEXT button.
- 4 Set the hour by pressing the + or button and press the NEXT button.
- 5 Set the minute by pressing the + or button.
- 6 With an announced time signal, press the NEXT button.

The clock now starts operating, showing the correct time. The dots of the colon alternately blink every 30 seconds.

#### **NEXT** button

Each time the NEXT button is pressed, the item to be set blinks to let you know the setting order.

#### +/- buttons

The + and - buttons can be pressed in two ways.

When you hold a button down, the digit will advance continuously until the button is released.



When you press and immediately release a button, the digits will advance by one.



#### To change the actual clock setting

Press the CLOCK SET button and repeat the clock setting procedure from step 1.

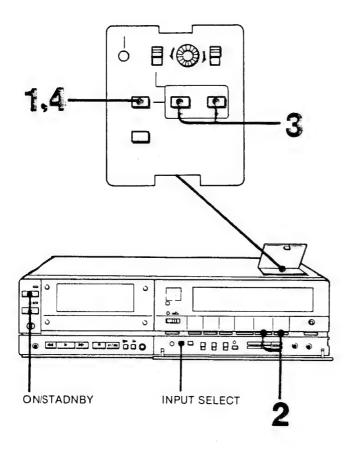
#### Note

If you have pressed the CLOCK SET button inadvertently, press the NEXT button enough times until the dots of the colon blink.

When power has been interrupted, the time indiation reverts to "Su 0:00", showing that the clock mist be reset.

#### 1-6. PROGRAMMING TV STATIONS





This recorder has 30 programme positions. Once you preset the programmes broadcast in your area, programme selection is simply made by pressing the + or - button on the recorder or the hand-held Remote Commander.

To start programming, turn on the EV-S600 by pressing ON/STANDBY switch and select TUNER by pressing the INPUT SELECT button.

- 1 Press the SEARCH ON/OFF button.
- 2 Press the + or PROGRAM/TIMER button to select the programme position.
  - + for a higher-numbered programme position
  - for a lower-numbered programme position
- 3 Press the + TUNING button to locate a station with higher frequency and the - TUNING button to locate a station with lower frequency. The tuning indicator in the display window shows the approximate location of the current channel. When a station has been received, the search will stop. Press the + or - TUN-ING button again, until the desired station is received

#### Repeat steps 2 and 3 for all the desired stations.

4 Press the SEARCH ON/OFF button again so that the tuning indicator disappears.

#### To cancel an unused programme

- 1 Select the programme to be cancelled with the + or PROGRAM/TIMER button.
- 2 Press the SEARCH ON/OFF button.
- 3 Press the CLEAR button.
- 4 Press the SEARCH ON/OFF button again.

Then the cancelled programme will be skipped when the + or - PROGRAM/TIMER button, or the + or - side of the PROGRAM button on the Remote Commander is pressed. When the corresponding programme number button on the Commander is pressed, the sound of the cancelled programme will be cut out.

#### To fine tune a station

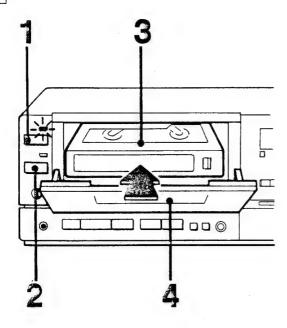
If the picture of a particular station is not acceptable, check that the SEARCH ON/OFF button is set to OFF, set the AFT switch to OFF and keep the + or - TUNING button pressed until the picture becomes clear. To view this particular station, set the AFT switch to 0FF.

#### To hear stereo broadcasts

Normally set the AUTO STEREO ON/OFF selector to ON. If there is too much interference, set the switch OFF in which case all the TV programmes willbe received monaural.

#### 1-7. CASSETTE CARE





G-2



Always insert a cassette in the correct direction. Never insert it upside down.

The lamp inside the compartment blinks while the tape is being loaded. Wait until the blinking stops before proceeding.

#### CASSETTE INSERTION G-1

- 1 Turn on the power.
- 2 Press the **button**.
- 3 Insert the cassette with the window side up and in the direction of the arrow on the cassette.
- 4 Press the cassette holder.

#### CASSETTE EJECTION

- 1 Turn on the power.
- 2 Press the ≜ button. After the lamp stops blinking, the cassette holder opens in front.
- 3 Remove the cassette and close the cassette holder.

#### THE TAB ON THE CASSETTE G-2

(The photo is Sony cassette.)

When a new recording is made on a previously recorded cassette, the previous recording will be automatically erased. To avoid erasing a recording, slide the tabout to cover the opening.

When the tab is out, a recording cannot be made. To rerecord on a cassette, slide the tab in.

#### Note

Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the kind of tape, thickness tape, if the tab is out or in, etc.

#### RECORDING TIME

The recording time of any given cassette in the LPmode is 2 times that in the SP mode.

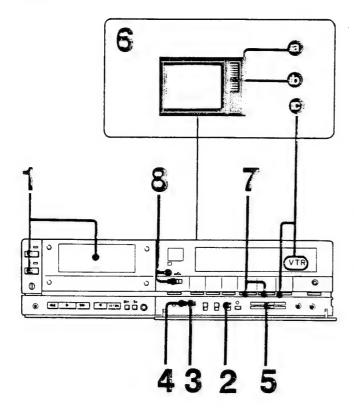
The recording time can be selected by the recording mode selector.

Cassette used	SP mode	LP mode
P5-30	30 min.	1 hr.
P5-60	1 hr.	2 hr.
P5-90	1 hr. 30 min.	3 hr.

The playback speed is automatically set.

#### 1-8. TV PROGRAMME RECORDING

H-1



#### Caution

Television programmes, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

#### OPERATIONS H-1

- 1 Turn on the power and insert the cassette tape. Be sure that the tab on the cassette has been slid inside so that you can record.
- 2 Set the PCM MODE selector to NORM (normal).
- 3 Select either SP or LP recording mode with the recording mode selector.
- 4 Press the INPUT SELECT button to display "TUNER" in the window.
- 5 Set the upper RECORDING LEVEL control to the "AUTO" position (to the left end).
- 6 Turn on the TV.
  - If your TV does not have audio/video inputs, select the programme position adjusted for receiving signals from the EV-S600.
  - O If the AUDIO/VIDEO IN jacks or MULTIIN connector of your TV/monitor is connected to the EURO-CONNECTOR on the EV-S600, select the correct input to receive audio/video signals.
  - G If the SCART or PERI-TV of your TV/monitor is connected to EUROCONNECTOR on the EV-S600, press the TV/VTR button on the EV-S60O, so that the VTR indicator is displayed.
- 7 Select the programme to be recorded with the + or button.
- 8 Slide the RECORD switch to the right to start recording.

The red lamp lights up.

The recording will go on even if the TV isturned off.

When receiving the stereo broadcast programmes, the STEREO indicator will be displayed in the window.

When receiving the bilingual broadcast programmes, the BILINGUAL indicator will be displayed in the window.

Select the sound to be monitored with the AUDIO MONITOR (MAIN/SUB/MS) selector.

#### Recording will be made as follows. H-2

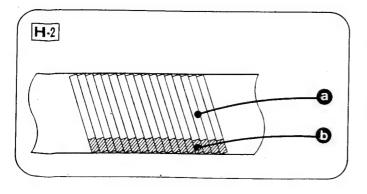
Standard track

Video/audio signals of the TV programme are recorded.

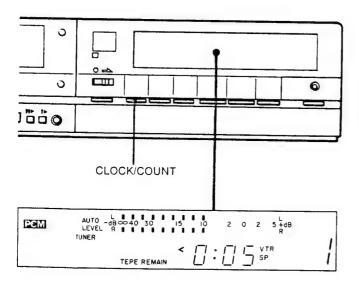
The audio signal is recorded in monaural and the main sound of a bilingual broadcast is recorded.

O PCM track

Audio signals from the connected equipment or the TV are recorded in the stereo PCM node.



H-3



To stop recording, press the button.

To stop the tape momentarily, press the **II**/► button.

To resume recording, press the II/ button again. If you do not resume recording within about 7 minutes, the pause mode will be automatically released and the unit will enter the stop mode.

When the recording is made to the end of the tape, the tape will be autoamtically rewound to the beginning and the unit will enter the stop mode. The power remains on.

# TO CHECK THE AMOUNT OF THE TAPE REMAINING [H-3]

Press the CLOCK/COUNT button several times so that the TAPE REMAIN display appears in the window. The remaining recording or playback time of the tape is displayed.

- The remaining time appears only after the "-:--" indication has blinked for a few seconds.
- The < mark appears for less than 1 minute.</li>

Depending on the amount of time remaining on the tape, the TAPE REMAIN display will indicate the amount in different intervals. See the chart below.

Remaining time	Interval
3 to 2 hours	every 15 minutes
2 to 1 hour	every 10 minutes
1 hour to 10 minutes	every 5 minutes
10 to 0 minute	every 1 minute

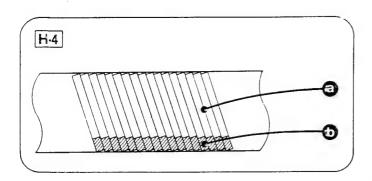
#### **Notes**

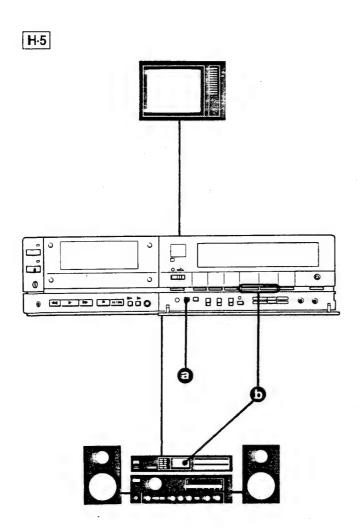
- The remaining time will not be displayed during picture search, double-speed playback or while a blank tape is played.
- The remaining time display during the step-by-step or the slow-speed playback only indicates the time remaining when the playback started.

#### FOR SMOOTH RECORDING

Recording should always be started from the recording pause mode for smooth transitions between scenes. Proceed as follows if the recording was stopped or if you want to record on a pre-recorded tape from a desired point.

- 1 Play back the tape to the point from which the New recording is to begin.
- 2 Press the II/ button to stop the tape at the desired point.
- 3 Set the recorder in the recording pause mode by sliding the RECORD switch to the right.
- 4 Press the II/► button again when you want to sart recording.





#### TO VIEW ANOTHER TV PROGRAMME WHILE RECORDING

- If your TV does not have audio/video inputs, select the programme you want to view with the TV's programme selector.
- If the AUDIO/VIDEO IN jacks or MULTI IN connector of your TV is connected to the EUROCONNECTOR on the EV-S600, select the correct input and programme you want to view with the TV's input and programme selectors.
- If the SCART or PERI-TV of your TV is connected to the EUROCONNECTOR on the EV-S600, press the TV/VTR button so that the VTR mark disappears and select the programme you want to view with the TV's programme selector.

#### TO RECORD A TV PROGRAMME WHILE RECORDING AN FM BROADCAST AT THE SAME TIME...FM SIMULCASTS RECORDING

Recording will be made as follows. H-4

#### Standard track

Video and audio signals of the TV programme will be recorded.

#### PCM track

FM broadcast programme from the AUDIO IN jacks will be recorded in the stereo mode.

#### Over-the-air FM simulcasts

Sometimes a TV station and an FM radio station will broadcast a programme simultaneously so that you can record a TV programme in high-fidelity stereo. The TV programme (video and monaural audio) is recorded normally on the standard track and the stereo audi o portion is recorded on the PCM track from your FM tuner.

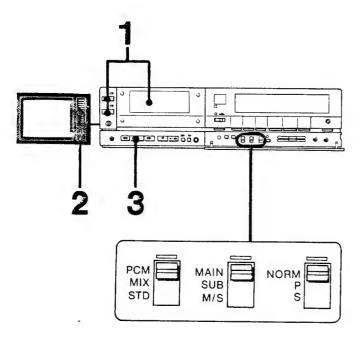
For details on connection, see page 13.

The recording operation is the same as the "TV PRO-GRAMME RECORDING " on page 17 except for the following two points. H-5

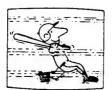
- 1 In step 4 of the "TV PROGRAMME RECORDING", select the "SIMUL" display in the window by pressing the INPUT SELECT button.
- 1 In step 7, select the programmes to be recorded both on the VTR and the FM tuner.

#### 1-9. PLAYBACK

1-1



1-2



#### Preparation [-1]

Make sure that the AUDIO MONITOR selectors are set to the PCM and MAIN positions and the PCM MODE selector to NORM. This is the most basic settings. For various other settings, see page 22.

- 1 Turn on the power and insert the cassette.
- 2 Turn on the TV/monitor.
- If your TV does not have audio/video inputs, select the programme position that was adjusted for receiving signals from the EV-S600.
- If the AUDIO/VIDEO IN jacks or MULTI IN connector of your TV/monitor is connected to the EUROCON-NECTOR on the EV-S600, select the correct input to receive audio/video signals. (When the SCART or PERI-TV of your TV/monitor is connected to the EUROCONNECTOR on the EV-S600, the input signal is selected automatically in setp 3.)
- 3 Press the ▶ button.

#### To adjust the picture

Turn the SHARPNESS control (in the tuning compartment) toward the SHARP position for a sharper picture and the SOFT position for a softer picture.

#### To stop playing

Press the button.

#### Still picture

Press the II/ button during playback. The picture may have streaks and the sound will be muted.

To resume normal playback press the **II**/► button again.

If you do not release the still picture mode within about 7 minutes, it will be released automatically and playback will resume.

#### If the still picture seems to shake

Turn the STILL ADJ control (in the tuning compartment) clockwise or counterclockwise using the supplied screwdriver until the picture stabilizes.

#### Step-by-step playback

In the still picture mode, press the II button. Just tap the button to advance the picture by one frame. Keep the II button pressed to advance the picture frame by frame continuously.

During step-by-step playback, the picture may have streaks and the sound will be muted.

To resume normal playback, press the 11/>> but ton again.

#### Slow-speed playback

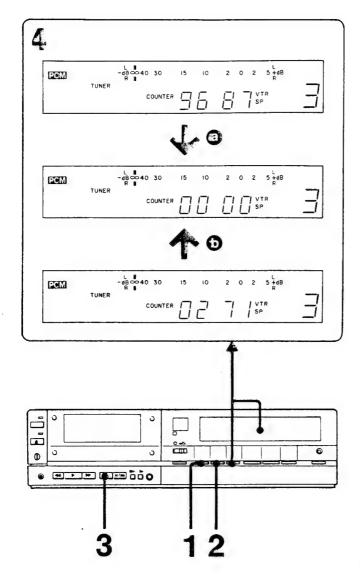
#### ...to view the picture in 1/5-speed

In still picture mode, press the I> button.

During slow-speed playback, the picture may have streaks and the sound will be muted.

To resume normal playback, press the I▶ button ag ain and then the II/▶◄ button.

FF or REW...to advance or to rewind the tape rapidly Press either button in the stop mode; for rewinding and for advancing the tape rapidly. To stop the tape, press the button.



### Picture search...viewing the picture at a fast speed to find a particular scene

Keep the ✓ or ▶▶ button pressed during playback: ✓ for reverse high-speed playback and ▶▶ for forward high-speed playback.

During searching a particular scene, streaks will appear and the sound will be muted. 1-2

When you release the << or >> button, normal playback will resume.

#### Notes

- The picture may be distorted in step-by-step playback, slow-speed playback and picture search modes.
- When a tape recorded in SP mode is played back in still picture or picture search mode, the picture may appear in black and white or shake depending on the TV being used.
- In picture search mode, streaks appear wider with a tape recorded in SP mode than that recorded in LP mode.
- If the picture is not displayed and/or the sound is not heard or heard only intermittantly when a tape which has been recorded on a video camera recorder or a video cassette recorder without the PCM function is played back on this unit, set the AUDIO MONITOR selector on this unit to STD.

#### Double-speed playback

During playback, press the x2 (double-speed) button. The sound will be muted.

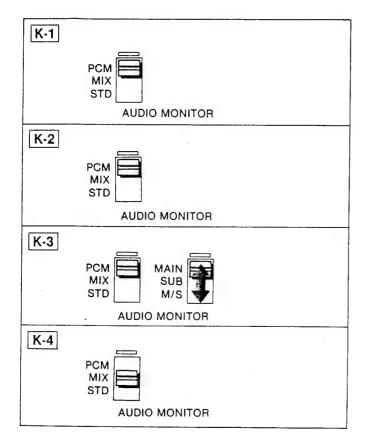
To resume normal playback, press the x2 button again.

# Auto-play...to play back a tape from the beginning of the tape after rewinding

Press ► while holding ◄ depressed. After the tape is completely rewound, it will automatically be played back.

# Tape return...To stop the tape at the "0000" point after it has been rewound $\boxed{J}$

- 1 Press the CLOCK/COUNT button so that the COUNTER is displayed in the display window.
- 2 During recording or playback, set the counter to "0000" by pressing the COUNT RESET button at the point you wish to review later.
- 3 When the recording, playback or rewinding is finished, press the button to stop the tape.
- 4 Press the TAPE RETURN button. The tape is then advanced or rewound and stops near the "0000" point.
  - Tape is advanced forward.
  - Tape is rewound.



#### PLAYBACK OF STANDARD OR PCM SOUND

When the AUDIO MONITOR selectors are set to the PCM and the MAIN positions

When you play back a tape with nothing recorded on the PCM track, you automatically hear the sound recorded on the standard track. When you playback a tape recorded with bilingual sound, you automatically hear the main sound.

Select the appropriate position of each AUDIO MONITOR selector according to what you want to monitor.

(Refer to the notes about the standard and PCM tracks on page 17.)

For monitoring a tape recorded in the stereo mode (PCM track playback) K-1

Set the left AUDIO MONITOR selector to PCM.

For monitoring a tape recorded in the FM simulcast mode (PCM track playback) K-2

Set the left AUDIO MONITOR selector to PCM.

For monitoring a tape recorded in the bilingual mode (PCM track playback) K-3

Set the left AUDIO MONITOR selector to PCM and the right AUDIO MONITOR selector to the position of the sound which you want to hear.

For monitoring an audio dubbed tape (PCM and standard tracks playback) K-4

Set the left AUDIO MONITOR selector to MIX.

#### **USE OF THE TAPE COUNTER**

When the unit is turned on, press the CLOCK/COUNT button to display the COUNTER.

Before starting recording or playback, press the COUNT RESET button to set the counter to "0000".

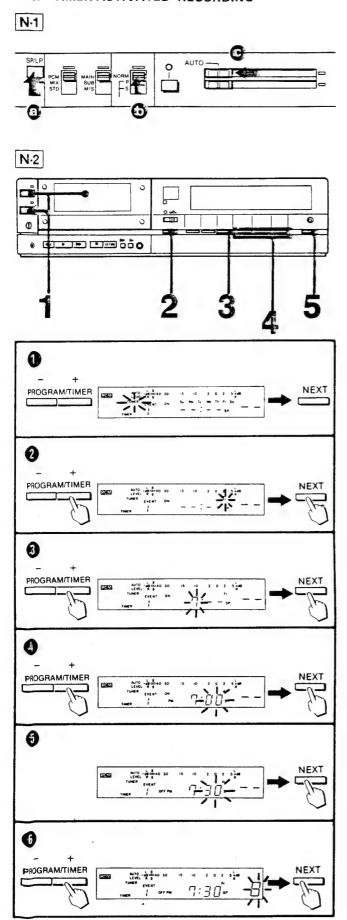
Note the counter reading at the desired point so that you can easily find that point later by referring to the counter.

Automatic playback or stop is possible at the tape counter "0000" position after rewinding. See "Tape return" on page 21.

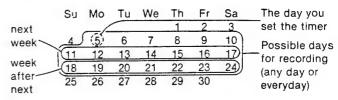
#### **Notes**

- The counter reading will be retained in the memory even after the power is turned off and the display reverts to the clock, as long as a cassette is in the cassette compartment.
- The counter reading is automatiacally reset to zero when a cassette is inserted.

#### 1-10. TIMER-ACTIVATED RECORDING



The built-in timer permits automatic recording of up to six preselected TV programmes, even when you are not at home. The timer can be set to operate any time until the 3rd or, if the day of presetting is a Saturday, the 2nd Saturday from the day you preset the programmes.



#### **Notes**

- In timer-activated recording, the recording mode (SP or LP) cannot be selected every time you make a programme setting.
  - Once the recording mode, SP or LP has been selected, all programmes will be recorded in that mode. Note that the recording mode selector (SP/LP) still seems to be active as the SP or LP indicators can be changed in the display window; however, the selector is not operative.
- If you change the position of the PCM MODE selector after the timer setting has been made, the setting will be completely cancelled.

#### Preparation

- Make sure the clock is set to the correct current time.
- Check that the following controls and switches are set correctly. N-1
  - Select the recording mode with the recording mode selector
  - Set the MULTI PCM selector to the NORM position.
  - Set the upper RECORDING LEVEL control to the AUTO position.

#### Operation N-2

- 1 Turn on the power and insert a cassette.
- 2 Press the SELECT button to switch the functions of the buttons below the display window.
- 3 Press the TIMER SET button.
  - If 6 programme settings have already been made, the display does not turn into that of the timer.
- 4 Set the appropriate day, time, and channel by pressing the +/- button and then the NEXT button. Every time you press NEXT, the item to be preset next flashes. Do not forget to press NEXT, otherwise the presetting process will not advance to the next step.

Suppose you want to make a recording of programme 8 from AM 7:00 to AM 7:30 on Friday.

#### Turn-on time setting

- Make sure that the "TUNER" indicator flashes in the display window.
  - If you have "LINE" or "SIMUL" in stead of "TUNER", press the +/- buttons to get "TUNER".
- Set the day.
- Set the hour.
- Set the minutes.

#### Turn-off time setting

- Set the turn-off time (hour and minutes) just as you have set the turn-on time.
- G Set the programme number.

The memorized turn-on and turn-off times will be displayed successively and then the current time (or the display before the TIMER SET button is pressed) will appear.

To preset more programmes, press the TIMER SET button again to display another empty programme position. Repeat steps 1 to 6.

5 Press the TIMER REC ON/OFF button.
The unit will turn off and the recorder will be in the standby mode: The "TIMER REC" indicator appears in the window and only the TIMER CHECK button lights up.

#### **Notes**

- Recording will start automatically at the preset turnon time and will stop at the preset turn-off time. The setting of the recorded programme, except settings for everyday, will be erased and the programme positions preset in the timer will advance one by one.
- Be sure to press the TIMER REC ON/OFF button after presetting, otherwise the timer recording will not be made.
- Make sure the cassette tape is long enough to record all the programmes set. When the tape reaches the end during the timer recording, the recording stops and the recorder will be turned off automatically. In this case, the tape will not be rewound automatically to the beginning.
- ONCE THE TIMER REC INDICATOR HAS LIT UP, NO FUNCTION OF THE RECORDER CAN BE ACTI-VATED, except for the TIMER REC ON/OFF button and the TIMER CHECK button. This is to safeguard the timer recordings.

If you select an incorrect digit for the turn-on/off time setting, press the +/- buttons at the same time.

The programme which is currently being set will be cancelled but the other programmes previously set will remain.

# BEFORE THE TIMER-ACTIVATED RECORDING STARTS

#### To release a timer-activated recording

To release a timer or quick timer (see page 26) setting to operate the unit manually for the usual operations, press TIMER REC ON/OFF, so that the TIMER REC indicator in the display window disappears. Then, turn on the power and operate the unit. But never reset the PCM MODE selector, so memories will be erased.

When you press TIMER REC ON/OFF again, the timer recordings will be made as preset.

#### To check the timer settings

Press TIMER CHECK. Every time you press this button, each preset time will be displayed successively. If you keep TIMER CHECK depressed, each preset time of event 1 through 6 will be displayed in sequence.

If you press this button while viewing a TV programme, the timer preset channel will appear one by one on the screen.

#### To change the timer settings

- 1 Press TIMER REC ON/OFF so that the TIMER REC indicator disappears.
- 2 Turn on the power. Press SELECT so that the TIMER CHECK indicator appears.
- 3 Tap TIMER CHECK until the setting to be changed appears in the display window.
- 4 Press TIMER SET.
- 5 Tap NEXT until the item to be changed blinks.
- 6 Change the setting with the +/- buttons.
- 7 Press NEXT until the current time appears.

The succeeding programme numbers of other preset programmes will advance one by one and the programme which is changed here will shift to the ultimate position.

#### To cancel a timer setting

- 1 Press TIMER REC ON/OFF so that the TIMER REC indicator disappears.
- 2 Turn on the power. Press SELECT to display the TIMER CHECK indicator.
- 3 Press TIMER CHECK to select the turn-on or -off time of the programme to be erased.
- 4 Press +/- simultaneously. The timer setting is cancelled. The succeeding programme numbers will shift automatically by the number of cancelled programmes.

Press TIMER REC ON/OFF again to reactivate the function for other preset programmes.

#### **DURING TIMER-ACTIVATED RECORDING**

#### To interrupt a recording

Press the TIMER REC ON/OFF button.

The TIMER REC indicator will disappear, the record g will be interrupted and the unit will be turned off.

# VARIOUS FORMS OF TIMER-ACTIVATED RECORDING

To record a programme at the same time everyday

When you set the day of the week, display all the indicators from Sunday to Saturday.

Recording will continue to the end of the tape.

If you do not want to record on a particular day, press TIMER REC ON/OFF to cancel the setting. To reactivate the setting, press TIMER REC again.

To record using the entire tape, set the turn-off time to a time after the tape will reach the end or to exactly the same time as the turn-on time. Recording will continue to the end of the tape, after which recorder will be turned off.

To record simultaneously a TV programme and an FM radio programme, make the connections by referring to the illustration of "CONNECTING AN AUDIO SYSTEM" on page 13.

- Select "SIMUL" with the +/- button in step 4-10 of the timer-activated setting (See page 23.) The other operations are the same.
- Set the tuner so that the desired station is received when the recorder is turned on.

#### NOTES ON TIMER RECORDING

Problems when TIMER REC ON/OFF is pressed after the settings are made

The TIMER REC indicator does not light up and the unit is still turned on.

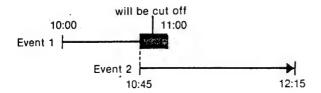
No cassette is inserted.
 Insert a cassette and press TIMER REC ON/OFF again.

#### The cassette is ejected.

- The tape is at its end.
   Rewind it and press TIMER REC ON/OFF again.
- The tab on the cassette is set to the safety position.
   Slide the tab in or use another cassette. Then, press TIMER REC ON/OFF again.

### When the presettings of your timer-activated recordings overlap

Even if there is an overlap, a recording will be made; however



the recording of programme 2 will begin before programme 1 is finished.

If the turn-on time of the 2 events is the same, recording of event 2 will be made.

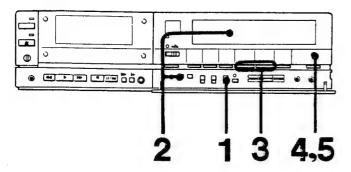
#### When a power interruption occurs

If the clock shows "Su 0:00" and blinks, the power has been interrupted for more than about 10 seconds and all the timer settings have been erased. Reset the clock and the timer settings.

If the power has been interrupted for less than about 10 seconds, the timer programmes are retained in the memory and the on-going timer recording will resume when the power is resupplied. However, the clock should be reset as it is slow by the duration of the power interruption.

#### 1-11. QUICK TIMER RECORDING





Use this function to begin recording a TV programme or audio signals immediately and to turn off the power automatically.

You can start a timer recording simply by pressing the QUICK TIMER button and set the recording duration, as well for up to 5 hours in 30 minutes intervals. This button is functional also during a regular non-timer recording so that the recording will stop and the power turns off after the preset duration.

# TO USE QUICK TIMER FROM THE TAPE STOP MODE

#### Preparation

- Turn on the unit and insert a cassette.
- Select the recording mode SP or LP.

#### Operation

1 Select the PCM recording mode.

For TV programme recording: set to NORM. For MULTI PCM recording: set to P (Parallel) or to S (Series).

2 Confirm input signals.

For TV programme recording: "TUNER" must be displayed.

For MULTI PCM recording: "AUDIO" must be displayed.

For FM simulcasts recording: "SIMUL" must be displayed.

- 3 Select the desired track for MULTI PCM recording with the +/- buttons.
- 4 Press QUICK TIMER so that "0:00" and "TIMER" appear in the display window.

For TV programme recording: programme number flashes.

For MULTI PCM recording: ➤ mark flashes.

You can change the selected programme number or the track while these indicators are flashing. (You have about 20 seconds.)

5 Press QUICK TIMER again to select the length of recording time.

THE TIMER REC indicator appears and the recording starts immediately.

The duration indication changes as follows:

$$0:00 \longrightarrow 0:30 \longrightarrow 1:00 \longrightarrow 1:30...... \rightarrow 5:00$$

(30 minutes) (one hour)

#### TO USE QUICK TIMER WHILE RECORDING

- 1 Press QUICK TIMER. The TIMER REC indicator appears.
- 2 Press QUICK TIMER again to select the length of recording time.

Recording will continue within the selected time.

#### Notes

 Normally, the quick timer recording can be made by simply pressing the QUICK TIMER button even if the unit is turned off.

However, in the following conditions, the QUICK TIMER recording will not start:

When no cassette is inserted.

When the tab on the casette is set to the safety position.

When the tape is at its end.

In these cases, only the power of the unit will be turned on.

Once the quick timer recording has started:

No function button except for the following will activate.

QUICK TIMER...to change the duration of the recording

■ II/►III...to stop quick timer recording momentarily

TIMER REC ON/OFF...to interrupt quick timer recording

 When a power interruption occurs during quick timer recording:

The recording stops and the power will be turned off. It will start again if the power is supplied within about 10 seconds.

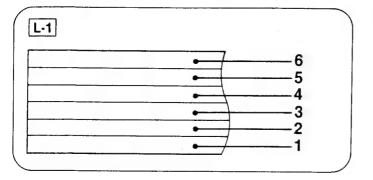
 When the tape comes to an end before the preset turn-off time:

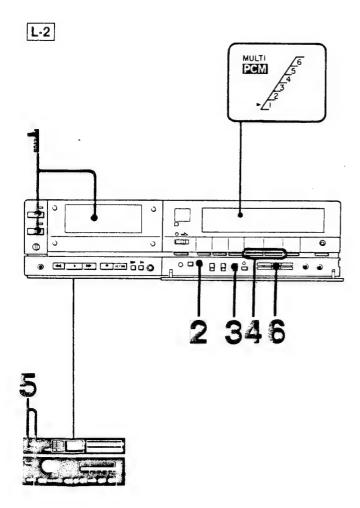
The recording stops and the recorder will be automatically turned off. The tape will not be rewound.

 The QUICK TIMER button cannot be used when the "TIMER REC" is displayed.

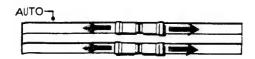
To use the QUICK TIMER, first press the TIMER REC ON/OFF button to turn off the TIMER REC indication.

#### 1-12. PCM AUDIO RECORDING AND PLAYBACK









L-1

Normally, both the video and audio signals can be recorded on your video tape.

However, you can record up to 6 tracks of only the audio signals in the PCM digital mode, using the full width of the tape.

This called MULTI PCM recording.

MULTI PCM recording is made up to 3 hours for each track.

The sound is recorded in stereo PCM mode.

#### RECORDING L-2

- 1 Turn on the recorder and insert a cassette tape.
- 2 Select the recording mode, SP or LP.
- 3 Set the PCM mode selector to P (Parallel) or to S (Series).
- 4 Select the track on which to record by pressing the +/- button.
- 5 Turn on the power of the connected equipment and select the audio source to be recorded.
- 6 Adjust the RECORDING LEVEL controls. Verify the adjustment with the peak level meter of the recorder.

#### RECORDING LEVEL ADJUSTMENT [1-3]

#### Manual adjustment

Referring the peak level meter, manually adjust the recording level. Set the RECORDING LEVEL control so that the first red LED lights up only at the highest signal level.

Select the best recording level for each source as follows.

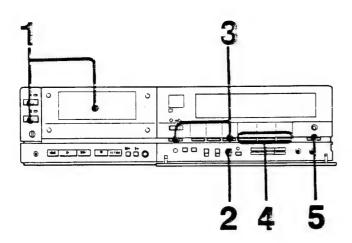
When recording	Set so that the first red LED lights up continu- ously.
When recording from a record or from an FM tuner.	Set so that the first red LED lights up occasionally.
When recording from a compact disc	Set so that the first red LED lights up sometimes.

#### Automatic adjustment

If the upper control (L) is set at the "AUTO" (left end) position, the recording level for both the left and right channels can be adjusted automatically. The "AUTO LEVEL" indicator will be displayed in the window.

During playback, you can read the recorded level on  ${\bf t}$  he peak level meter.

M-1



#### TIMER RECORDING

You can preset the recording of up to 6 radio programmes in the PCM mode.

#### **Notes**

#### in parallel recording

- If a programme is already preset on a track, you cannot preset another programme on the same track.
- For the first timer-recording programme, the tape will not be rewound automatically to the beginning. The recording will start from the current position of the tape.
- If the next programme starts before the tape has been rewound completely, the beginning of the programme will not be recorded.

#### In series recording

 After all the preset programmes are recorded, the tape will no be rewound automatically to its beginning.

#### Check before setting the timer M-1

- Is the clock set to the correct day and time?
- Is the tuner turned on?
- Is the recording level set to "AUTO"?
- Is the recording mode SP or LP selected?

#### Operation

- 1 Turn on the recorder and insert a cassette.
- 2 Select the timer recording mode P(parallel) or S (series). See page 30.
- 3 Press the SELECT button to change the functions of buttons and press the TIMER SET button.
- 4 Press the +/- buttons and the NEXT button to set the following items:
  - -audio track
  - -day of the week
  - -recording starting time
  - -ending time

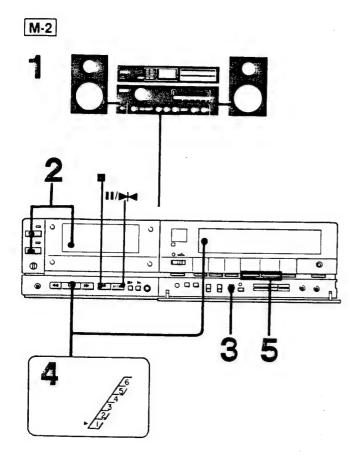
(Refer to step 4 of the Timer-activated recording on page 23.)

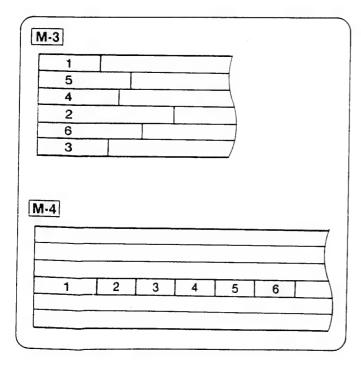
To make other settings, repeat steps 2 through 4 (in series recording, the audio track cannot be selected every time you make a programme setting.)

5 Press the TIMER REC ON/OFF button.

#### Note

If you change the position of the PCM MODE selector after having set the timer, all the settings will be cancelled.





#### PLAYBACK M-2

- 1 Turn on the connected equipment and select the appropriate input signal to hear the sound with the stereo speaker system.
- 2 Turn on the recorder and insert a cassette.
- 3 Set the PCM MODE selector. To monitor a MULTI PCM tape recorded on this unit, set to P. If there is no sound when a MULTI PCM tape recorded on another recorder is played back, set to S.
- 4 Press the ▶ button.
  The ▶ mark indicates the selected track to be monitored.
- 5 Select the track to be monitored by pressing the +/buttons.

The bar in the right side of the track indication
When the PCM MODE selector is set to P, the bar shows
the track on which recording has been made.
When the PCM MODE selector is set to S, all bars light
up even if nothing has been recorded on the tracks.

To stop the tape momentarily, press the **II**/► button. Press again to resume normal playback.

To stop the tape, press the button.

#### Note

While playback, we recommend that you set the RE-CORDING LEVEL controls to the "0" position. Because the noise which appears when you stop the tape may damage your speakers.

# Parallel recording.......Stereo recording of one programme on each track M3

- After a programme is recorded on one track, then, another recording will begin on another track from the beginning of the tape.
- You can select the track in any order for any programme.

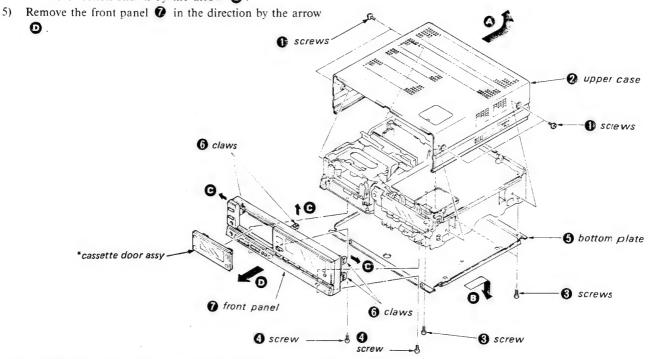
Series recording ......Stereo recording in series on only a single track M-4

 After one programme is recorded, another one is recorded successively on the same track.

# SECTION 2 DISASSEMBLY

# 2-1. REMOVAL OF THE FRONT PANEL AND CABINET CASE

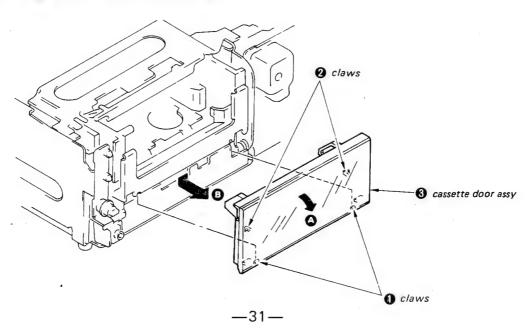
- 1) Remove the four screws **1** and remove the upper case **2** in the direction shown by the arrow **4**.
- 2) Remove the three screws 3 and loosen the two screws 4.
- 3) Remove the bottom plate **6** in the direction shown by the arrow **6**.
- 4) Remove the two screws **4** and remove the four claws **6** the direction shown by the arrow **6**.
- \* When removing the front panel, remove the cassette door assembly beforehand.



#### 2-2. REMOVAL OF THE CASSETTE DOOR ASSEMBLY

- 1) Remove the two claws **1** in the direction shown by the arrow **2**.
- 2) Remove the two claws 2 and remove the cassette door assembly 3 in the direction by the arrow 3.

Note: When attaching teh cassette door assembly 3, set the two claws 2 on the frame first.

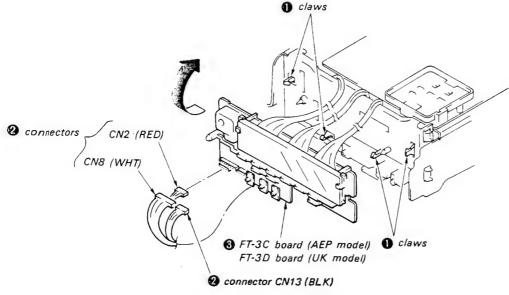


#### 2-3. REMOVAL OF THE CASSETTE COMPARTMENT ASSEMBLY

- 1) Remove the two screws 1.
- Remove the four screws 2 . 2)
- Remove the cassette compartment assembly 3 in the
- direction shown by the arrow. 2 screws Remove the two connectors (CN9, CN20) 4. 1 screw 1 screw 2 screws -4 connector CN9 (WHT) 3 cassette compartment assy-4 connector CN20 (WHT) -

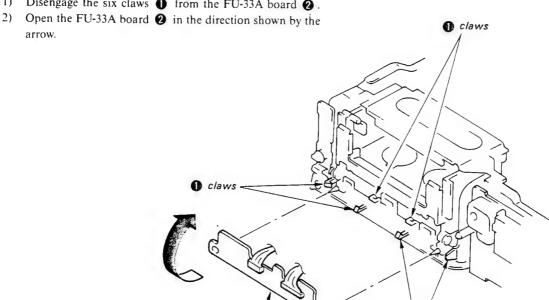
#### 2-4. REMOVAL OF THE FT-3C BOARD (AEP MODEL), FT-3D BOARD (UK MODEL)

- 1) Disengage the four claws 1.
- 2) Remove the three connectors (CN2, CN8, CN13) 2.
- Open the FT-3C board (AEP model), FT-3D board (UK model) 3 in the direction shown by the arrow.



#### 2-5. REMOVAL OF THE FU-33A BOARD

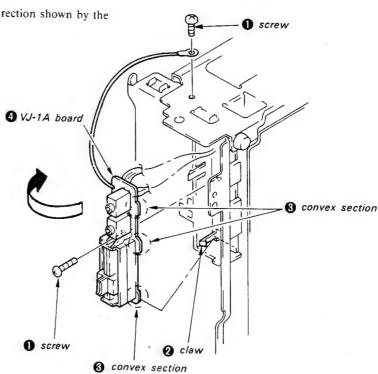
1) Disengage the six claws 1 from the FU-33A board 2.



2 FU-33A board

### 2-6. REMOVAL OF THE VJ-1A BOARD

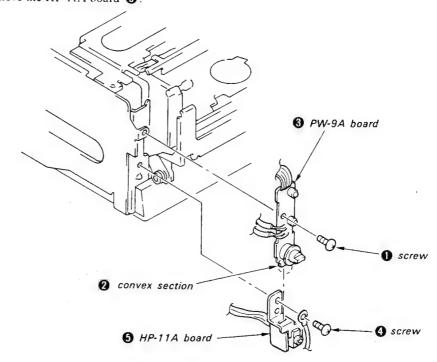
- 1) Refer to the "REMOVAL OF THE FT-3C BOARD (AEP MODEL). FT-3D BOARD (UK MODEL)" then remove the FT-3C board (AEP model). FT-3D board (UK model).
- 2) Remove the two screws 1.
- 3) Remove the claw 2.
- 4) Unfasten the three convex sections 3 and then, remove the VJ-1A board 4 from the frame.
- 5) Open the VJ-1A board (1) in the direction shown by the arrow.



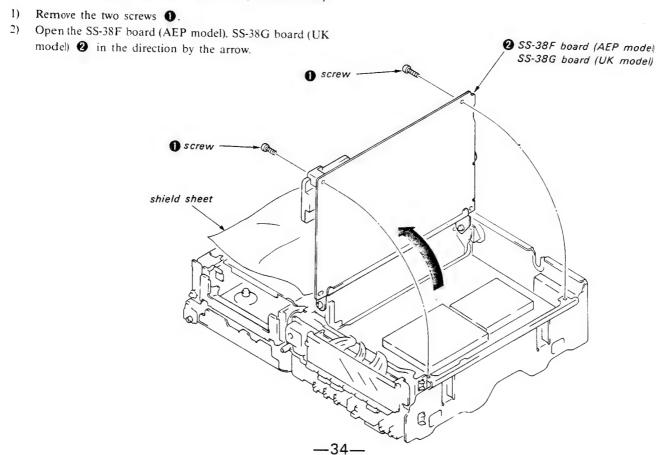
1 claws

#### 2-7. REMOVAL OF THE PW-9A, HP-11A BOARDS

- 1) Remove the screw 1.
- 2) Pull out the convex section 2 and remove the PW-9A board 3.
- 3) Remove the screw **(4)** and remove the HP-11A board **(5)**.

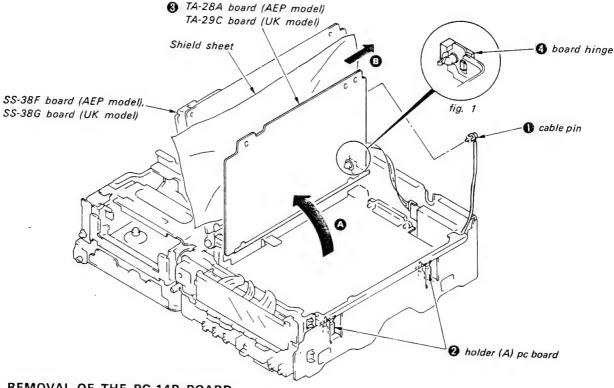


# 2-8. REMOVAL OF THE SS-38F BOARD (AEP MODEL), SS-38G BOARD (UK MODEL)



#### 2-9. REMOVAL OF THE TA-28A BOARD (AEP MODEL), TA-29C BOARD (UK MODEL)

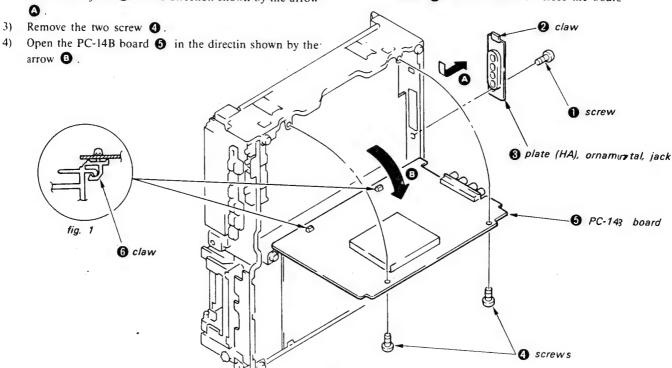
- 1) Remove the connector pin 1 .
- 2) Remove the two holder (A) pc board 2.
- 3) Open the TA-28A board (AEP model), TA-29C board (UK model) 3 in the direction shown by the arrow 4.
- Slide the TA-28A board (AEP model), TA-29C board (UK model) 3 in the direction shown by the arrow 3 and secure it to the board hinge 4 as shown in Fig. 1.



#### 2-10. REMOVAL OF THE PC-14B BOARD

1) Remove the screw 1.

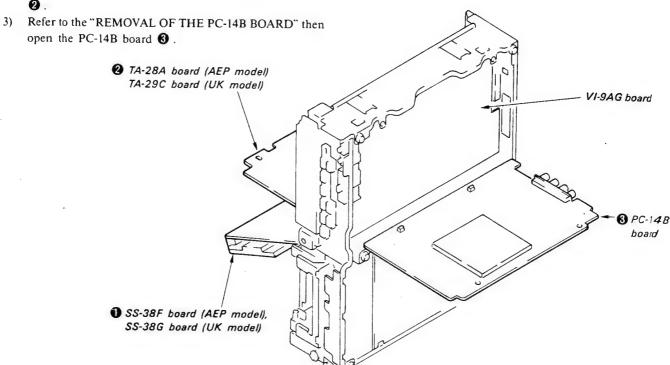
2) Exercise caution at the claw 2 and remove the plate (HA). ornamental, jack 3 in the direction shown by the arrow Note: When closing the PC-14B board **⑤**, as the PCB holder has been locked as shown in Fig. 1, unfasters the two claws 6 at first, and then close the board



35-

#### 2-11. REMOVAL OF THE VI-9AG, BOARD

- 1) Refer to the "REMOVAL OF THE SS-38F BOARD (AEP MODEL), SS-38G BOARD (UK MODEL)" then open the SS-38F board (AEP model), SS-38G board (UK model) ①.
- Refer to the "REMOVAL OF THE TA-28A BOARD (AEP MODEL), TA-29C BOARD (UK MODEL)" then open the TA-28A board (AEP model), TA-29C board (UK model)
   2

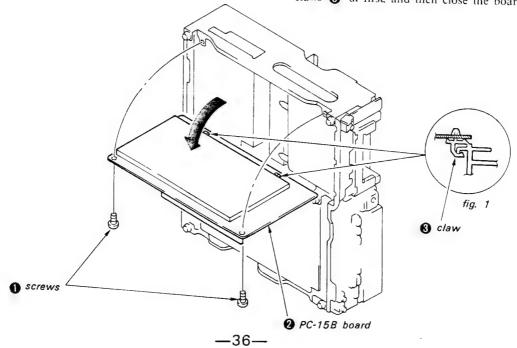


#### 2-12. REMOVAL OF THE PC-15B BOARD

1) Remove the two screws ①.
2) Open the PC-ISB board ② in the direction lead to the

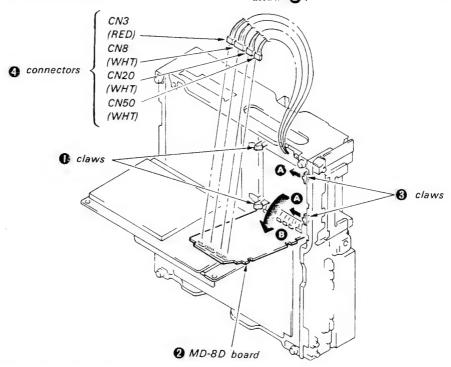
Open the PC-15B board 2 in the direction shown by the arrow.

Note: When closing the PC-15B board ②. as the PCB holder has been locked as shown in Fig. 1 unfasten the two claws ③ at first, and then close the board.



#### 2-13. REMOVAL OF THE MD-8D BOARD

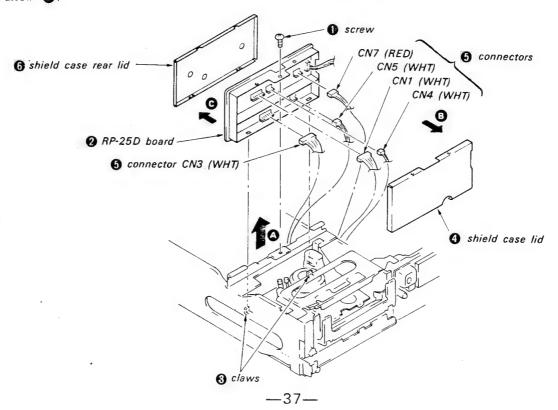
- 1) Remove the two claws 1.
- 2) Slide MD-8D board ② in the direction shown by the arrow ③ so that two claws disengage.
- 3) Pull out the four connectors (CN3, CN8, CN20, CN50) 4.
- 4) Open the MD-8D board 2 in the direction shown by the arrow 3.



#### 2-14. REMOVAL OF THE RP-25D BOARD

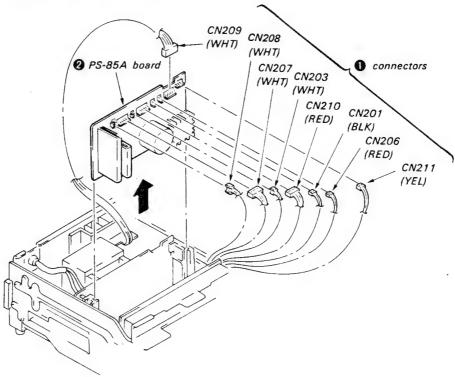
- 1) Remove the screw 0.
- 2) Release RP-25D board 2 from two claws 3 and remove it in the direction shown by the arrow 4.
- 3) Remove the shield case lid (a) in the direction shown by the arrow (b).
- 4) Pull out the five connectors (CN1, CN3, CN4, CN5, CN7)

  6.
- 5) Remove the shield case rear lid **6** in the direction shown by the arrow **6**.



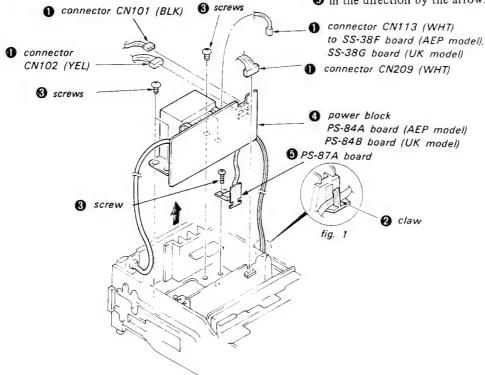
#### 2-15. REMOVAL OF THE PS-85A BOARD

- 1) Pull out the eight connectors (CN201, CN203, CN206, CN207, CN208, CN209, CN210, CN211) ①.
- 2) Remove the PS-85A board 2 in the direction shown by the arrow.



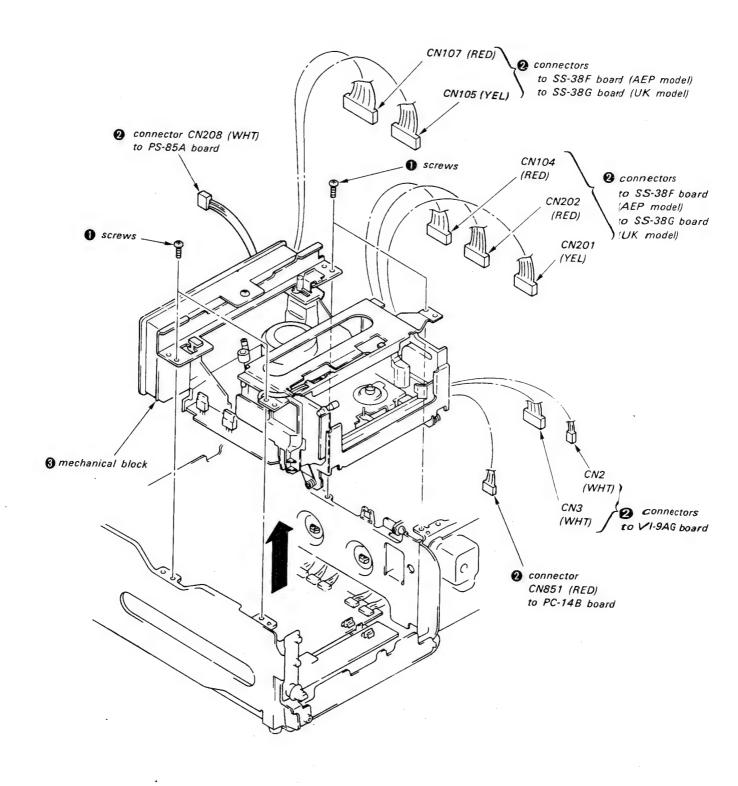
# 2-16. REMOVAL OF THE POWER BLOCK (PS-84A BOARD AEP MODEL), (PS-84B BOARD UK MODEL)

- 1) Pull out the four connectors (CN101,CN102, CN113, CN209) 1.
- 2) Remove the wiring from claw ② of P.S board which hold down the wiring.
- 3) Remove the five screws 3.
- 4) Remove the power block (PS-84A board AEP model). (PS-84B board UK model) (4) and remove the PS-87 board (5) in the direction by the arrow.



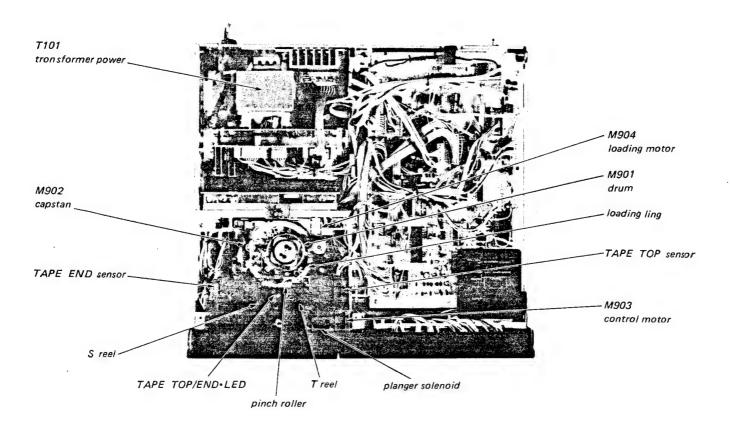
#### 2-17. REMOVAL OF MECHANICAL BLOCK

- 1) Remove the four screws 1.
- Pull out the nine connectors (CN2, CN3, CN104, CN105, CN107, CN201, CN202, CN208, CN851)
- 3) Remove the mechanical block 3 in the direction shown by the arrow.

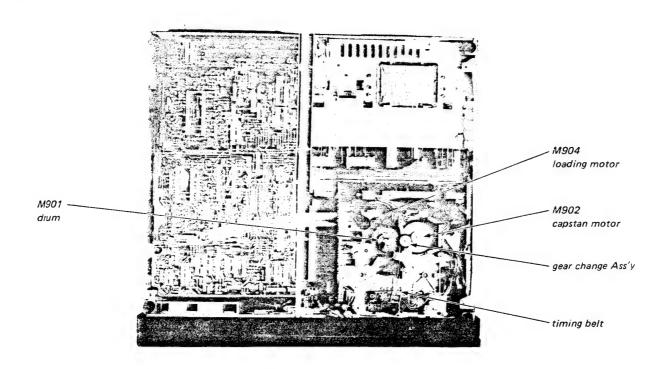


#### 2-18. INTEWNAL VIEWS

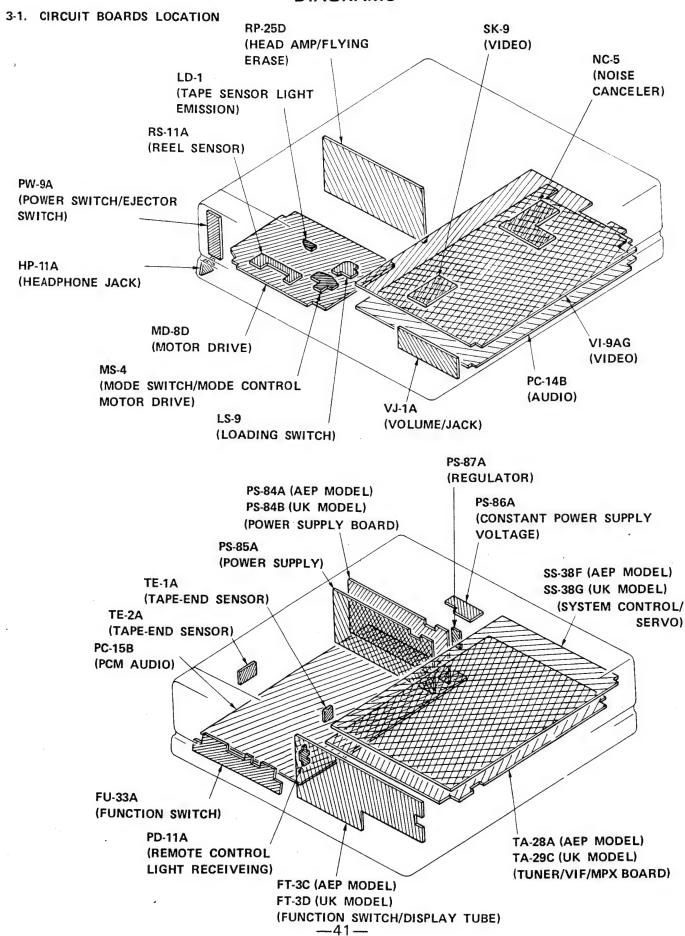
#### - Top side -



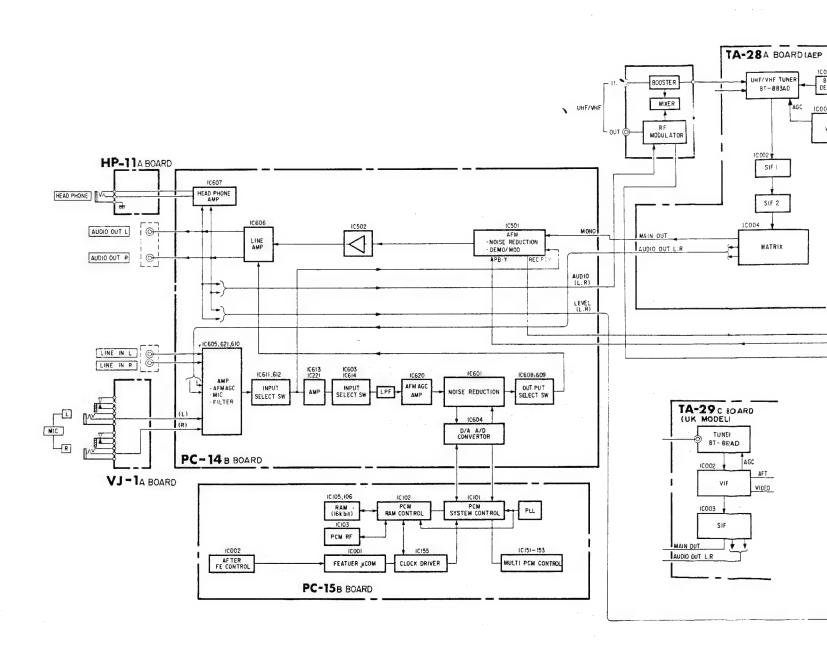
#### - Bottom side -

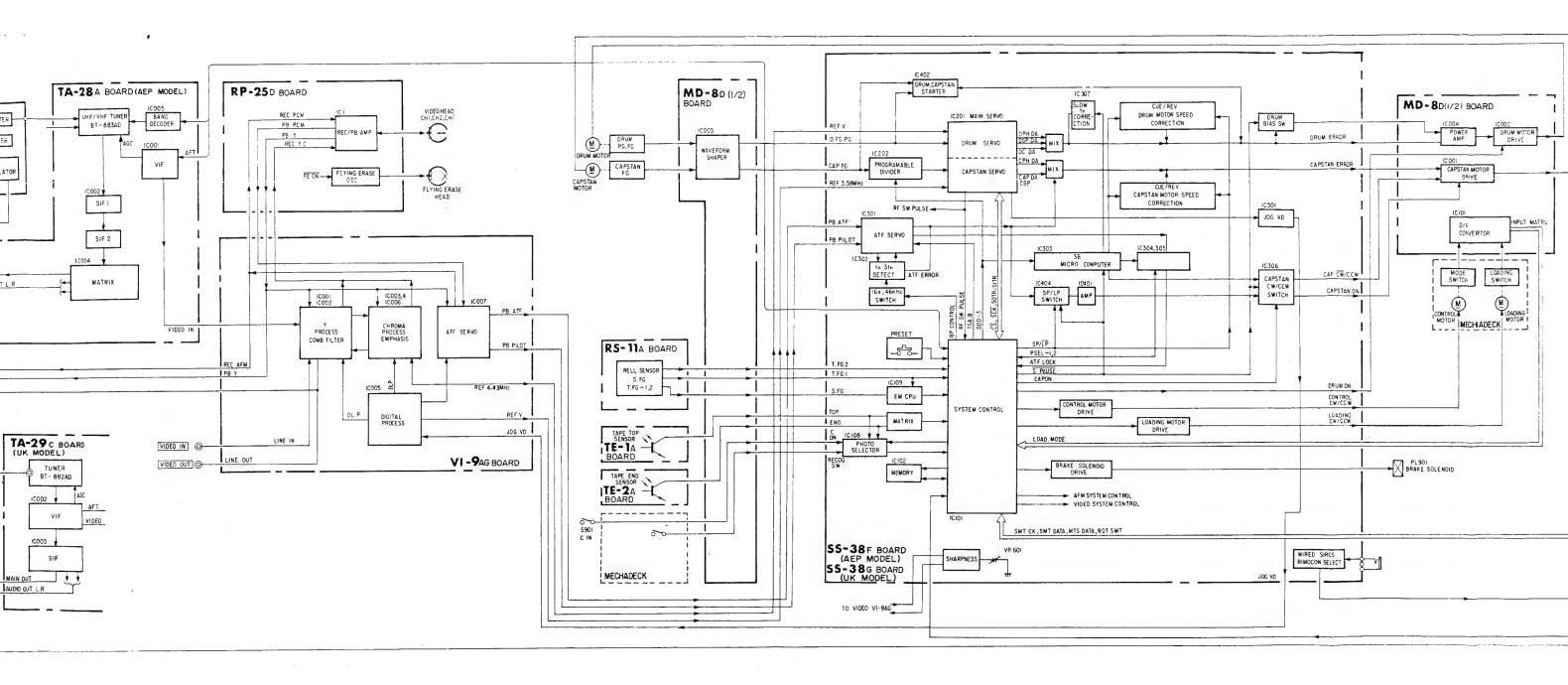


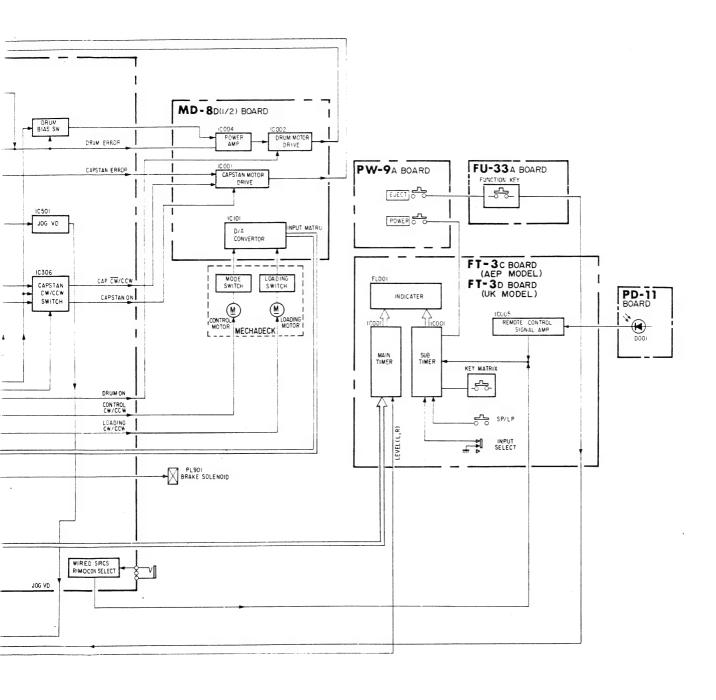
## SECTION 3 DIAGRAMS



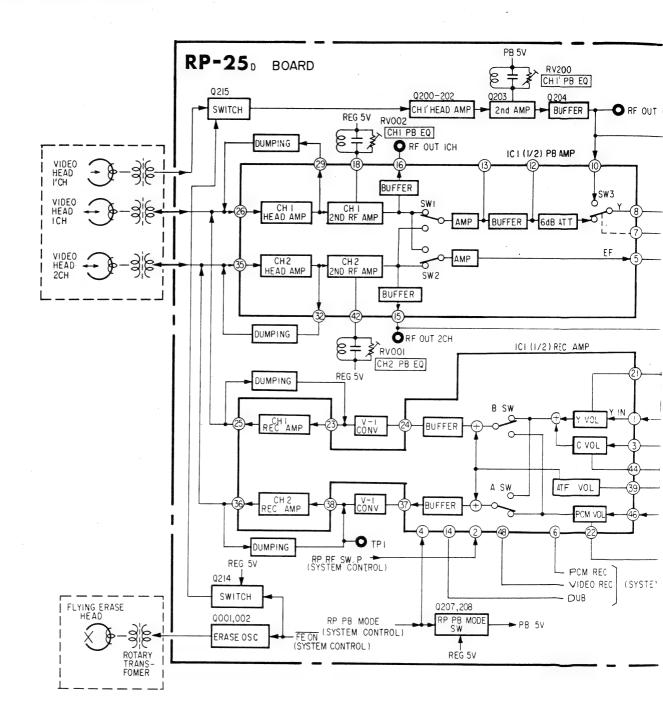
#### 3-2. OVERALL BLOCK DIAGRAM

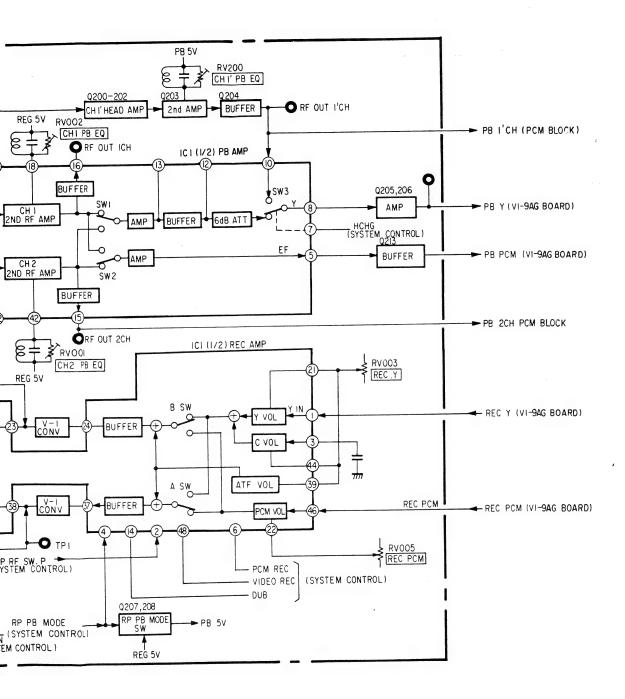


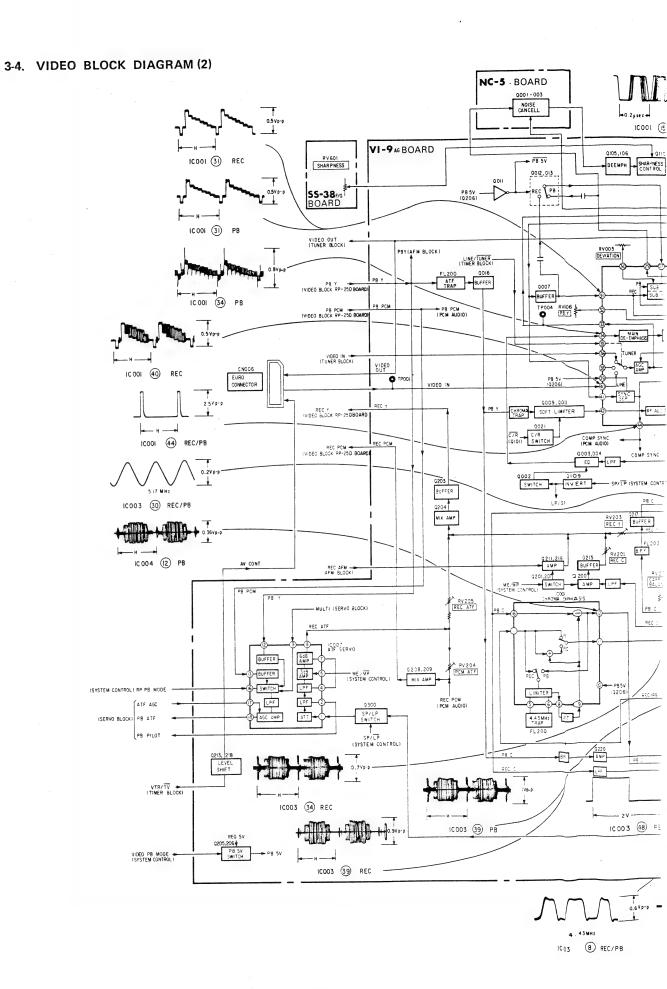


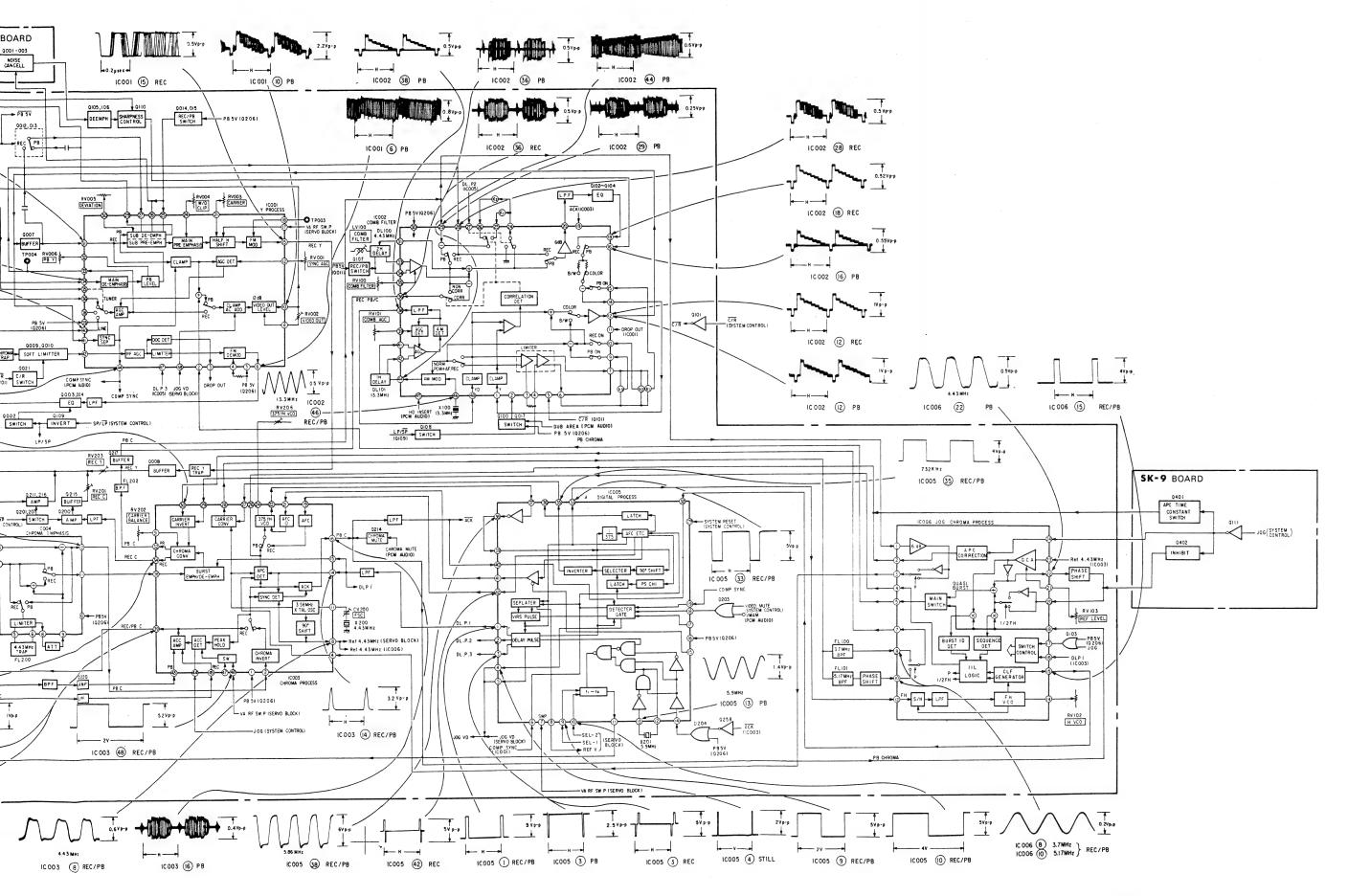


#### 3-3. VIDEO BLOCK DIAGRAM (1)

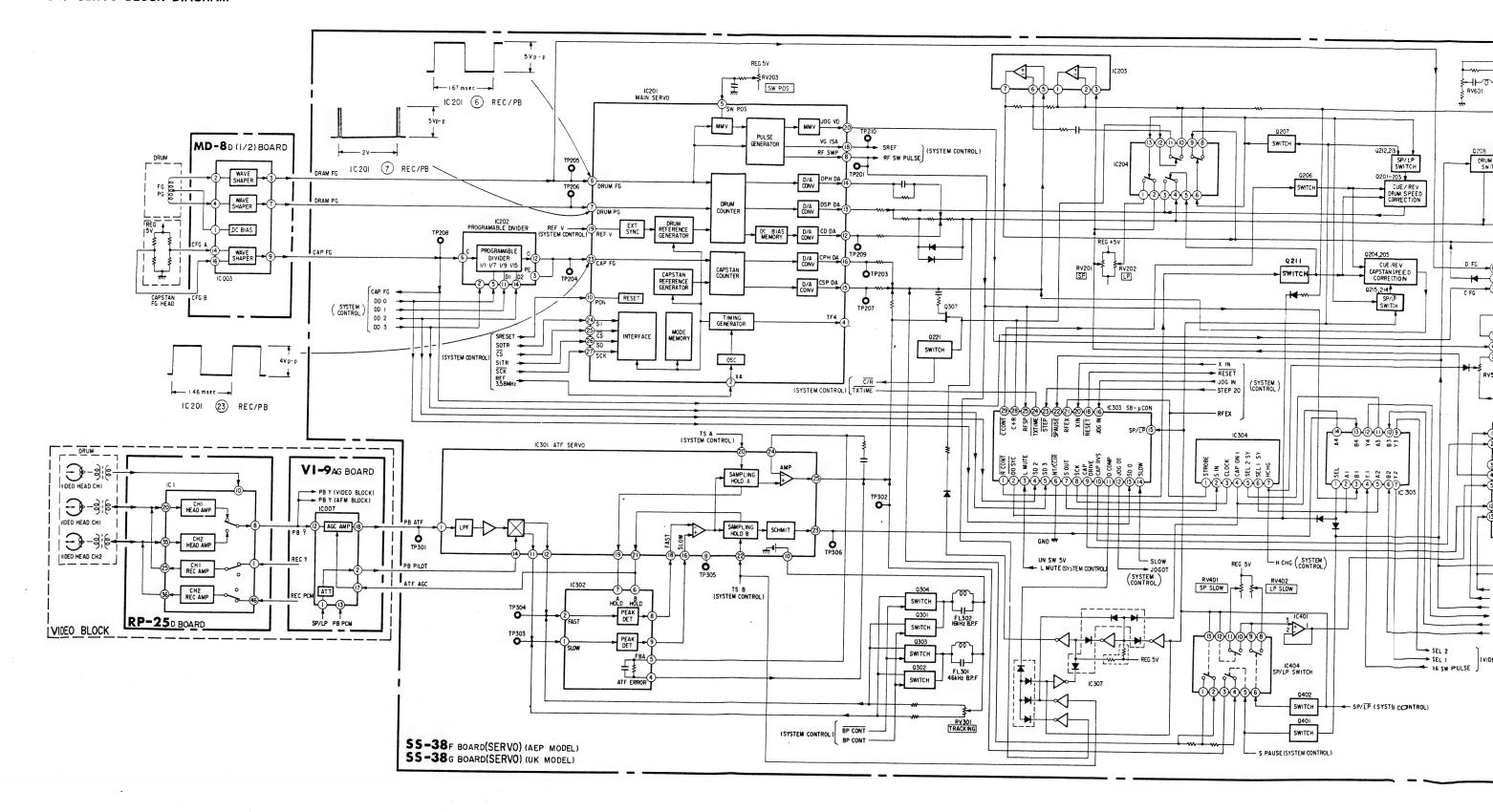


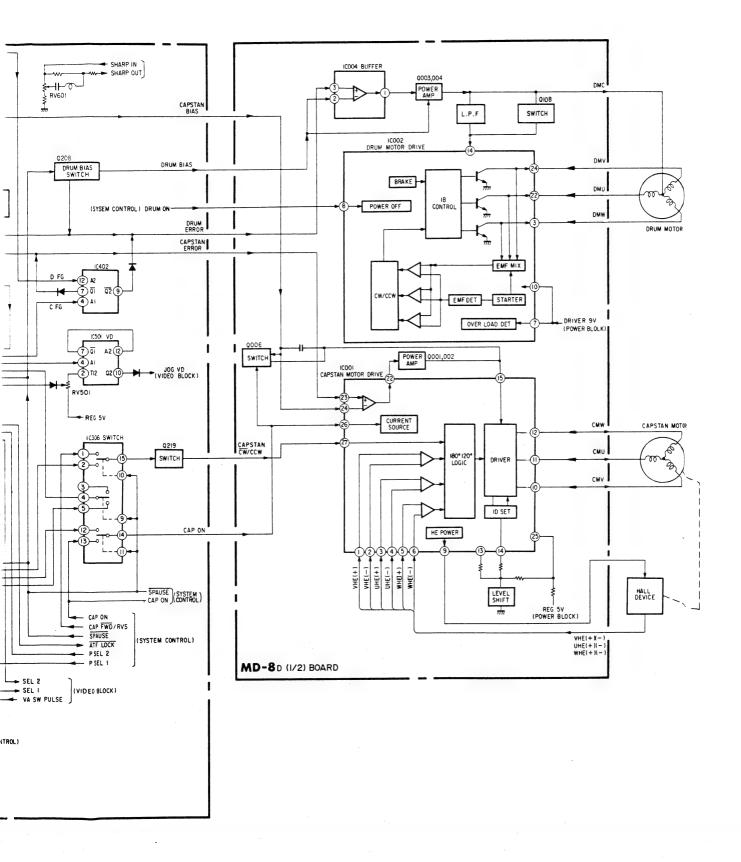






#### 3-5. SERVO BLOCK DIAGRAM





#### 3-6. SYSTEM CONTROL CIRCUIT AND RP AMP BLOCK INTERFACE

	MOD	JΕ	STOP	PB	REC	FF	REW	CUE	REV	РВ	REC	LOADING	E IECT	
SIGNAL	1/0	Pin No.	3101		I I		IL II		1111	PAUSE	PAUSE	LUADINO	EJECT	
AF REC	0	IC101 46pin	L	L	L	L	L	L	L	L	L	L	L	
FEON	0	IC 101 47 pin	Н	Н	L	H	Н	Н	Н	Н	Н	Н	Н	
RP PB MODE	0	IC101 48 pin	Н	Н	L	Н	Н	Н	Н	Н	Н	Н	Н	
VIDEO REC	0	IC101 49 pin	L	L	Н	L	L	L	L	L	L	L	L	1

#### 3-7. SYSTEM CONTROL CIRCUIT AND VIDEO BLOCK INTERFACE

	MOD	E		STOP	PB	REC	FF	REW	CUE	REV	PB	REC	LOADING	E IECT	
SIGNAL	1/0	Pin	No.	3101	70	REC	11	INCIT	COL	11.2.4	PAUSE	PAUSE	LOADING	EUECT	. L
VIDEO MUTE	0	IC101	43 pin	L	·L	L	L	L	L	L	L	L	L	L	
JOG	0	IC 101	44 pin	L	L	· L	L	L	Н	H	Н	L	L	L	
VIDEO PB	0	10101	45 pin	L	Н	L	L	L	Н	Н	Н	L	L	L	
SP/[P	0	ICIOI	38 pin	Depending on SP/LP SW	Result of au tomatic disc rimination	Depending on SP/LP SW which is acti- vated imme diately before	Н	Н	Holds PB mode which has been activated immediately before.	•	-	Depending on SP/LP SW which is acti- vated imme diately before	Н	Н	Hold: which activ imme befor
SRESET	0	10101	28 pin	L	لــ	L	L	L	L	L	L	L	L	L	

#### 3-8. SYSTEM CONTROL CIRCUIT AND FEATURE BLOCK INTERFACE

	MOE	Œ	STOP	РВ	REC	FF	REW	CUE	REV	РВ	REC	LOADING	FIECT	ſ
SIGNAL	1/0	Pin No.	5105	PB	REC		IVE VV			PAUSE	PAUSE	LUALATE	EUECT	
RQT SF	0	IC101 57pin												
MACK	l	IC101 75pin												
SO	0	Q116 collector	*1											
Si	1	QI50 emitter												
SFCK	1	QIO6 emitter												_

<sup>\*1</sup> Serial data transport control sim al and data signal control microcomputer and feau se microcomputer

#### 3-9. SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT INTERFACE

ADING	EJECT	DUB	DUB PAUSE
L	L	Н	L
Н	Н	Н	Н
Н	Н	Н	Н
L	L	L	L

)ADING	EJECT	DUB	DUB PAUSE
L	L	L	L
L	L	L	Н
L	L	Н	Н
Н	Н	Holds PB mode which has been activated immediately before.	•
L	L	L	L

ADING	EJECT	DUB	DUB PAUSE

signal and data signal of system ature microcomputer

	MOD	)E	STOP	PB	REC	FF	REW	CUE	REV	РВ	REC	LOADING	FJFCT	DUB	DUB
SIGNAL	1/0	Pin No.	3105	FD	NEC	1 1	116.44	COL	11.0	PAUSE	PAUSE	LUADIN	20201	500	PAUSE
SELI	0	ICIOI 41pin	Н	*1	*1	Н	Н	*1	*1	Н	Н	Н	Н	*1	Н
SEL 2	0	IC101 42pin	Н	*1	*1	Н	Н	*1	*1	*1	Н	Н	Н	*1	*1
SRESET	0	1C101 28pin	لـ		L	L	L	L	L	L	L	L	L	L	L
TSA	0	ICIOI 40pin	L	*1	L	L	L	L	L	L	L	L	L	*1	L
TSB	0	ICIOI 39pin	L	*1	L	L	L	L	L	*1	L	L	L	L	*1
ATFLOCK	1	ICIOI 3pin	4					*2							
CAP ON	0	IC101 35pin	L	Н	Н	Н	Н	Н	Н	Н	L	Н	Н	Н	H
CAP FWD/RVS	0	ICIOI 36pin	L	L	L	L	Н	L	Н	L	L	Н	L	L	L
DRM ON	0	ICIOI 37pin	L	Н	Н	Н	H	Н	Н	Н	Н	Н	Н	Н	Н
S PAUSE	0	ICIOI 4pin	Н	Н	Н	Н	Н	- H	Н	L	Н	Н	Н	Н	L
DD O	0	ICIOI 5pin	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н
DD I	0	ICIOI 6pin		L	L	Н	L	L	Н	L	L	L	Н	L	L
DD 2	0	ICIOI 7pin	L	٦	L	L	L	L	Н	L	L	L	Н	L	L
DD3	0	ICIOI 8pin	L	L	L	Н	Н	Н	L	L	L	L	Н	L	L
CAP FG32	ı	ICIOI 67pin	Unprovided	Provided	Provided	Provided	Provided	Provided	Provided	Unprovided	Unprovided	Provided	Provided	Provided	Unprovided
ĊS	0	ICIOI 27pin													
S0	0	Q116 collector	*3												
SI	1	Q118 collector													
SCK	0	Q117 collector	J												
ĪRQ	1	ICIOI 66pin	Unprovided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided
RFSWP	1	ICIOI 69pin	Unprovided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided
SP/LP	0	ICIOI 38pin	Depending on SP/LP SW	Result of automatic discrimination	Depending on SP/LP SW which is acti- vated immis diately before	Н	Н	Holds PB mode which has been activated immediately before.	-	-	Depending on SP/LP SW which is acti- vated imme diately before	Н	н	Holds PB mode which has been activated immediately before.	-
STEP 10	0	ICIOI 29pin	Н	Н	. Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н

<sup>\*1</sup> Changes in accordance with ATF sequence

<sup>\*2</sup> Changes in accordance with ATF tracking

<sup>\*3</sup> Serial digital input/output control signal and data signal against digital servo.

<sup>\*4</sup> At rise up/rise up and tape top/end of interruption input of RFSW pulses, pulse of "L" active is input.

### 3-10. SYSTEM CONTROL CIRCUIT AND MECHANISM BLOCK INTERFACE

	MOD	)E	STOP	РВ	REC	FF	REW	CUE	REV	PB	REC	LOADING	EJECT	DUB	DUB PAUSE
SIGNAL	1/0	Pin No.	310.	, 5				002		PAUSE	PAUSE				PAUSE
C DOWN	1	IC 108 5pin	L	L	L	L	L	L	L	L	L	L	L	L	L
TAPE TOP	١	1C108 3pin	-					*1							
TAPE END	١	IC 108 6pin	•					*2							
REC PROOF	1	1C108 2pin	-					*3							-
LOAD CW	0	IC101 23pin	L	L	L	L	L	L	L	L	L	Н	L	L	L
LOAD CCW	0	IC101 24pin	L	L	L	L	L	L	L	L	L	L	Н	L	L
CONT CW	0	IC 101 21 pin	L	L	L	L	L	L	L	L	L	L	L	L	L
CONT CCW	0	IC101 22pin	L	L	L	L	L	L	L	L	L	L	L	L	L
UNBRAKE START	0	IC101 25pin	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н
UNBRAKE HOLD	+	IC101 26 pin	Н	L	L	L	L	L	L	L	L	L	L	L	L

\*1 "H" at tane to

"H" at tane end

3 "H" at recording prohibit

### 3-11. SYSTEM CONTROL CIRCUIT AND AUDIO CIRCUIT INTERFACE

	MOD	ÞΕ	STOP	PB	REC	FF	REW	CUE	REV	PB PAUSE	REC	LOADING	EJECT	DUB	DUB
SIGNAL	1/0	Pin No.	3101		II.Lo		,,,,,,,			PAUSE	PAUSE				PAUSE
REC MUTE	0	IC 101 52 pin	Н	Н	L	Н	Н	Н	Н	Н	Н	Н	Н	Н	H
LINE MUTE	0	IC101 53pin	L	L	L	L	L	Н	Н	Н	L	L	L	L	L
AUDIO PB	0	IC 101 54 pin	Н	L	Н	Н	Н	L	L	L	Н	Н	Н	Н	Н

#### 3-12. SYSTEM CONTROL CIRCUIT AND TUNER BLOCK INTERF

							_
	MOD	E	STOP	PB	REC	FF	F
SIGNAL	1/0	Pin No.	3101	r b	NEC	1 1	
UP	-1	IC101 72 pin					
DOWN		ICIOI 74 pin	*1				
HDET	1	10101 70 pin					
AMUTE	0	IC101 1 pin	L	L	L	L	
BAND I	0	1C101 56pin	*2				
BAND 2	0	IC101 55 pin					
CLK	0	1C101 76 pin					
CI	0	IC 101 77 pin					
C 2	0	IC101 78 pin	*3				_
С 3	0	IC 101 79 pin					
1/0	1/0	IC 101 80 pin					

### 3-13. SYSTEM CONTROL CIRCUIT AND TIMER BLOCK INTERFA

	MOD	E	c	TOP	PB	REC	FF	F
SIGNAL	1/0	Pin No.	3	TUF	r b	n_C		
RQTMTS	1	IC 108 10 pin						
RQTSMT	0	ICIOI 58pin						
SMTDATA	0	IC101 63pin		*1				
TRDATA	١	QIO5 emitter						
SMTCK	0	QIO4 collector						

#### CK INTERFACE

_										
	FF ·	REW	CUE	REV	PB PAUSE	REC PAUSE	LOADING	EJECT	DUB	DUB PAUSE
	L	L	L	L	L	L	L	L	L	L

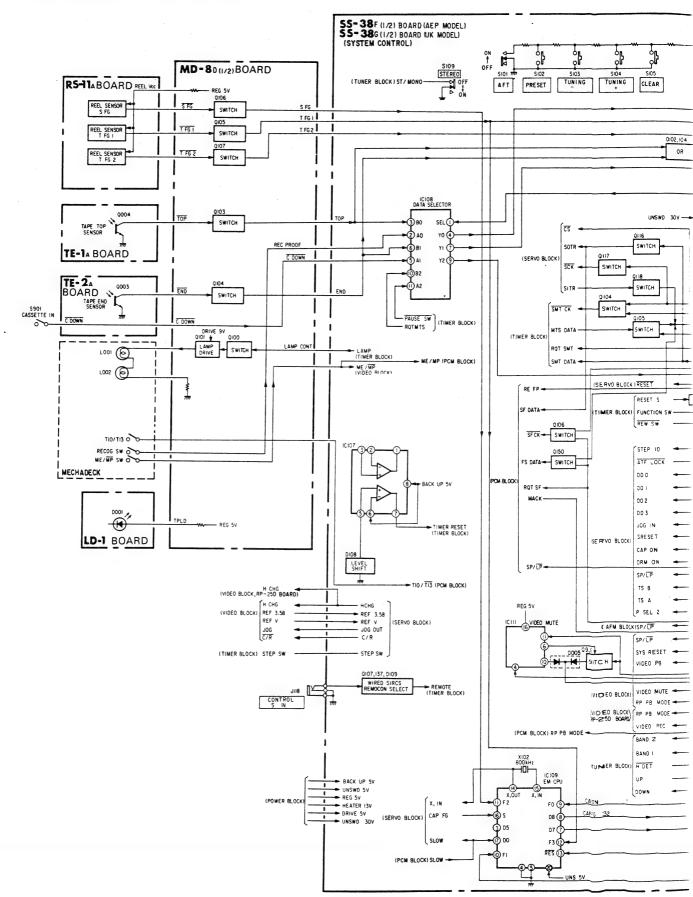
- \*1 \*2 \*3 Receiving condition during tuner selecting station
- Band output of tuner
- Write in/read out control signal and data signal of non-volatile memory for tuner

#### CK INTERFACE

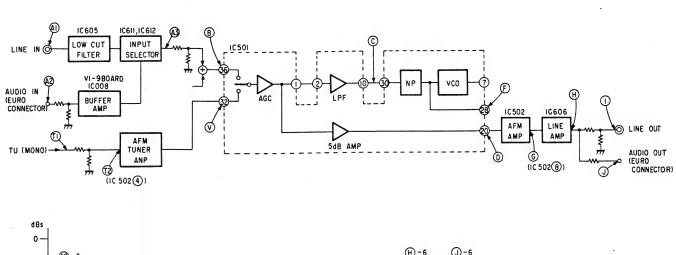
FF	REW	CUE	REV	PB PAUSE	REC PAUSE	LOADING	EJECT	DUB	DUB PAUSE
									:

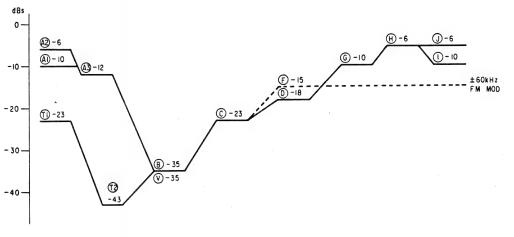
Serial data transport control signal and data signal of system control microcomputer and timer microcomputer

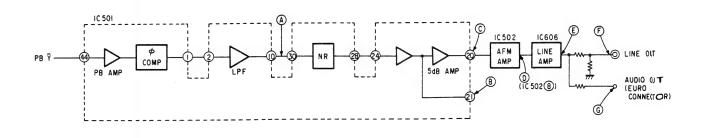
#### 3-14. SYSTEM CONTROL BLOCK DIAGRAM

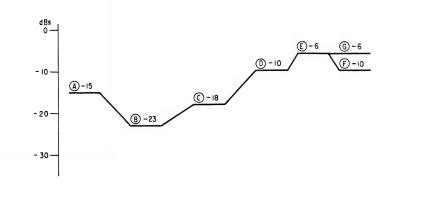


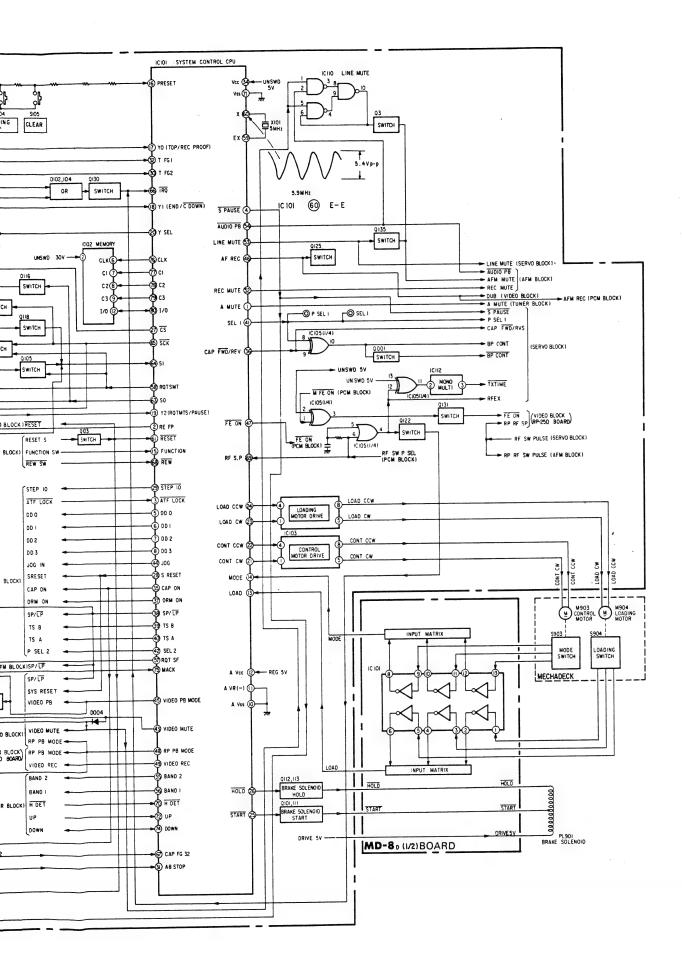




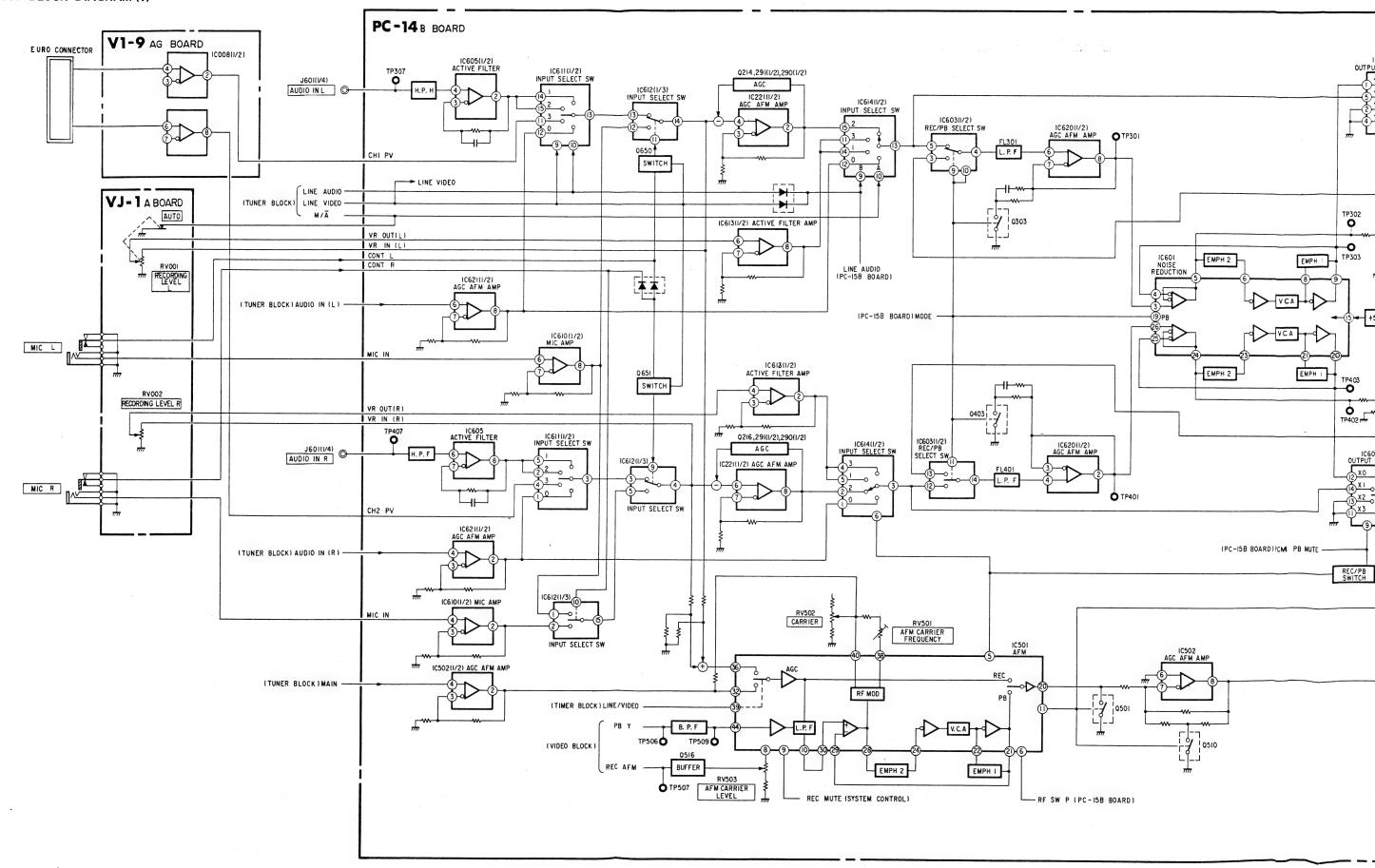


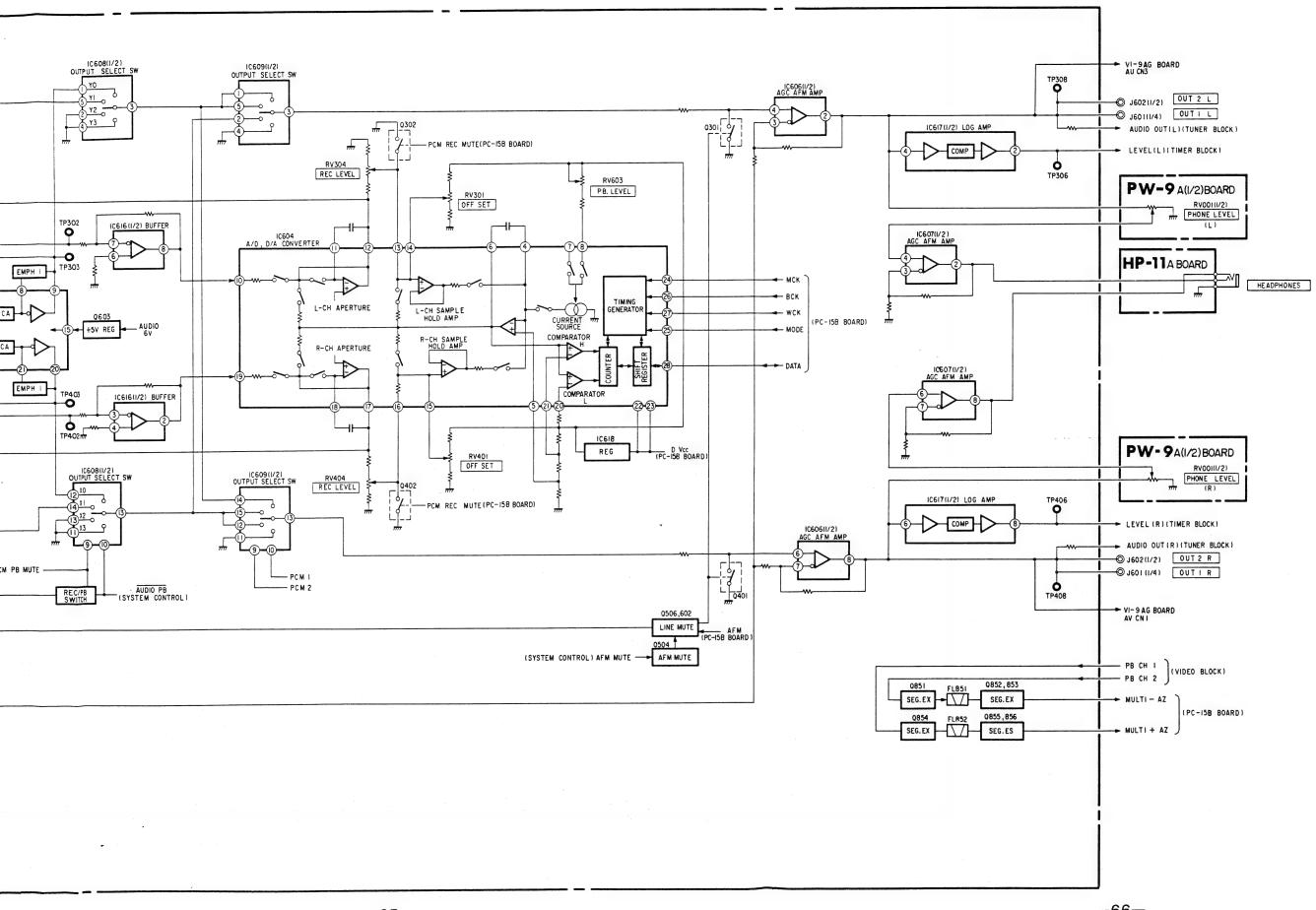




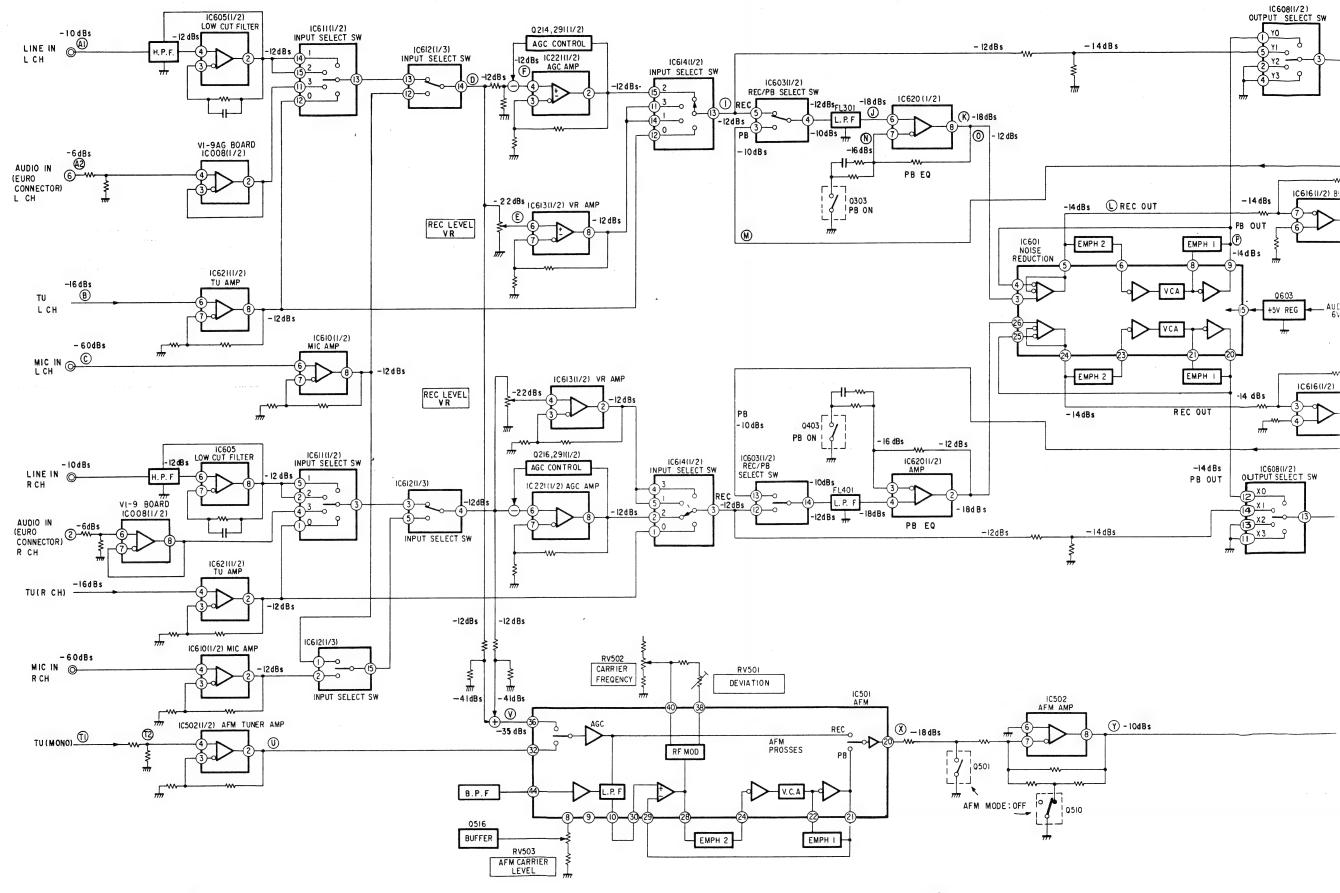


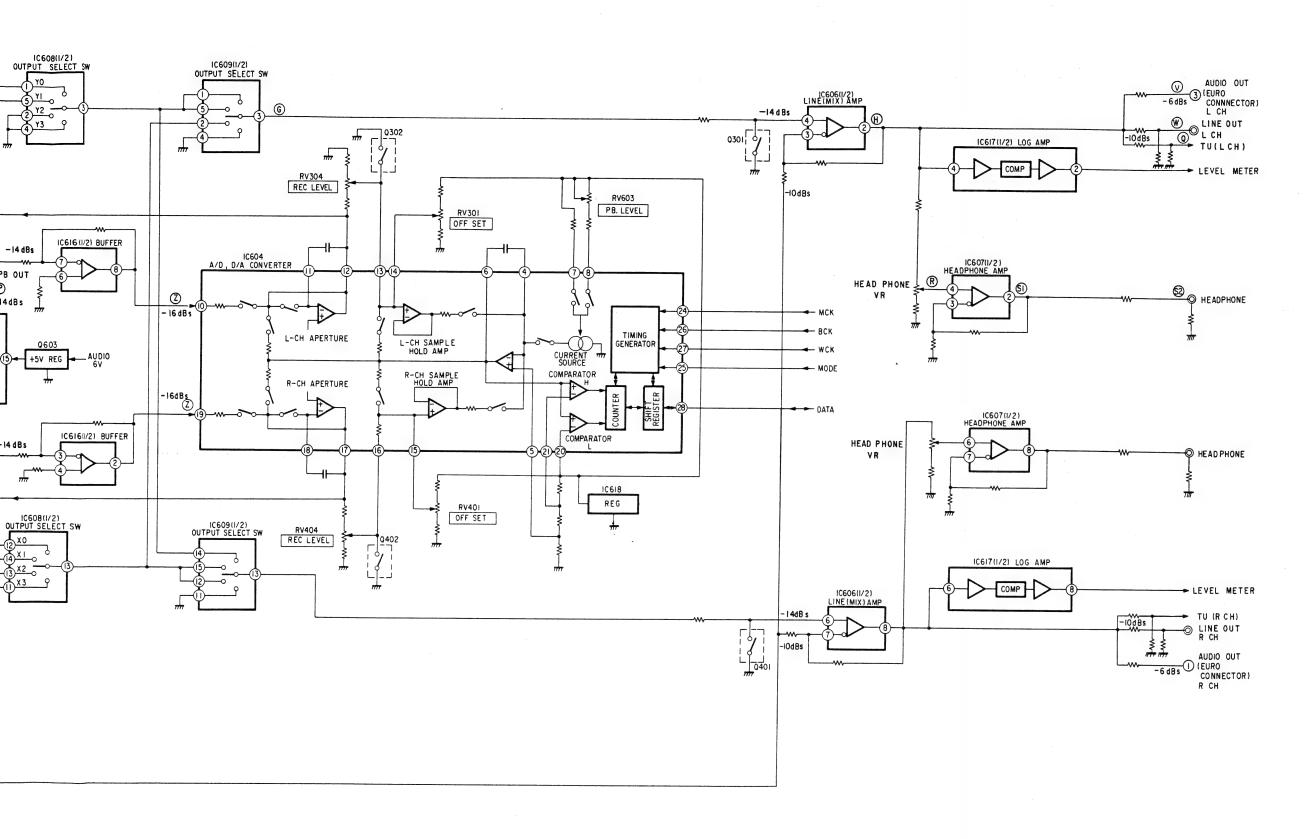
#### 3-16. AUDIO BLOCK DIAGRAM (1)





#### 3-17. AUDIO BLOCK DIAGRAM (2)

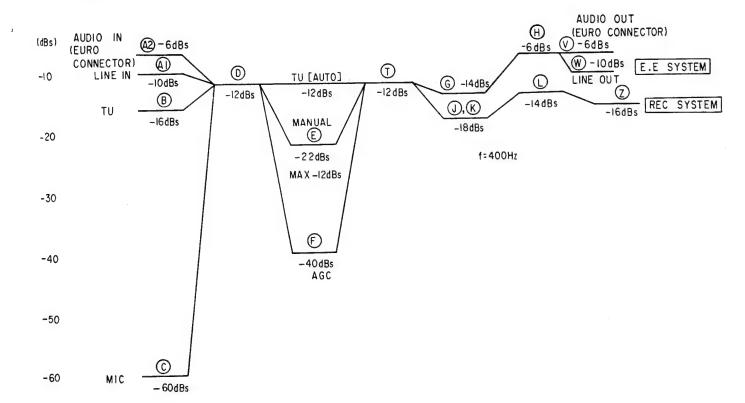




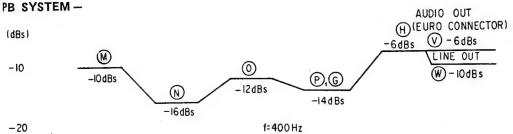
#### 3-18. AUDIO LEVEL DIAGRAM (2)

#### PCM

#### - REC SYSTEM -

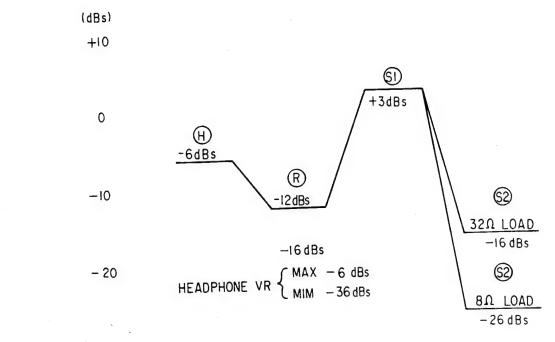


### PCM -- PB SYSTEM --

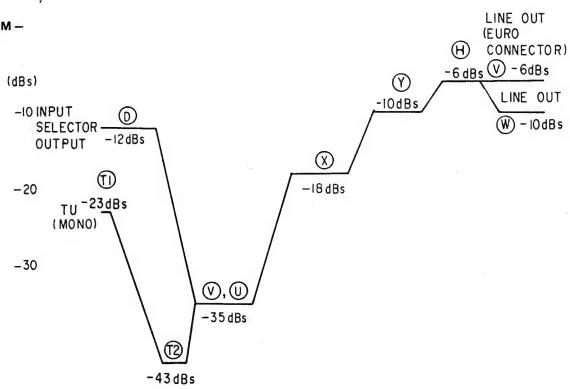


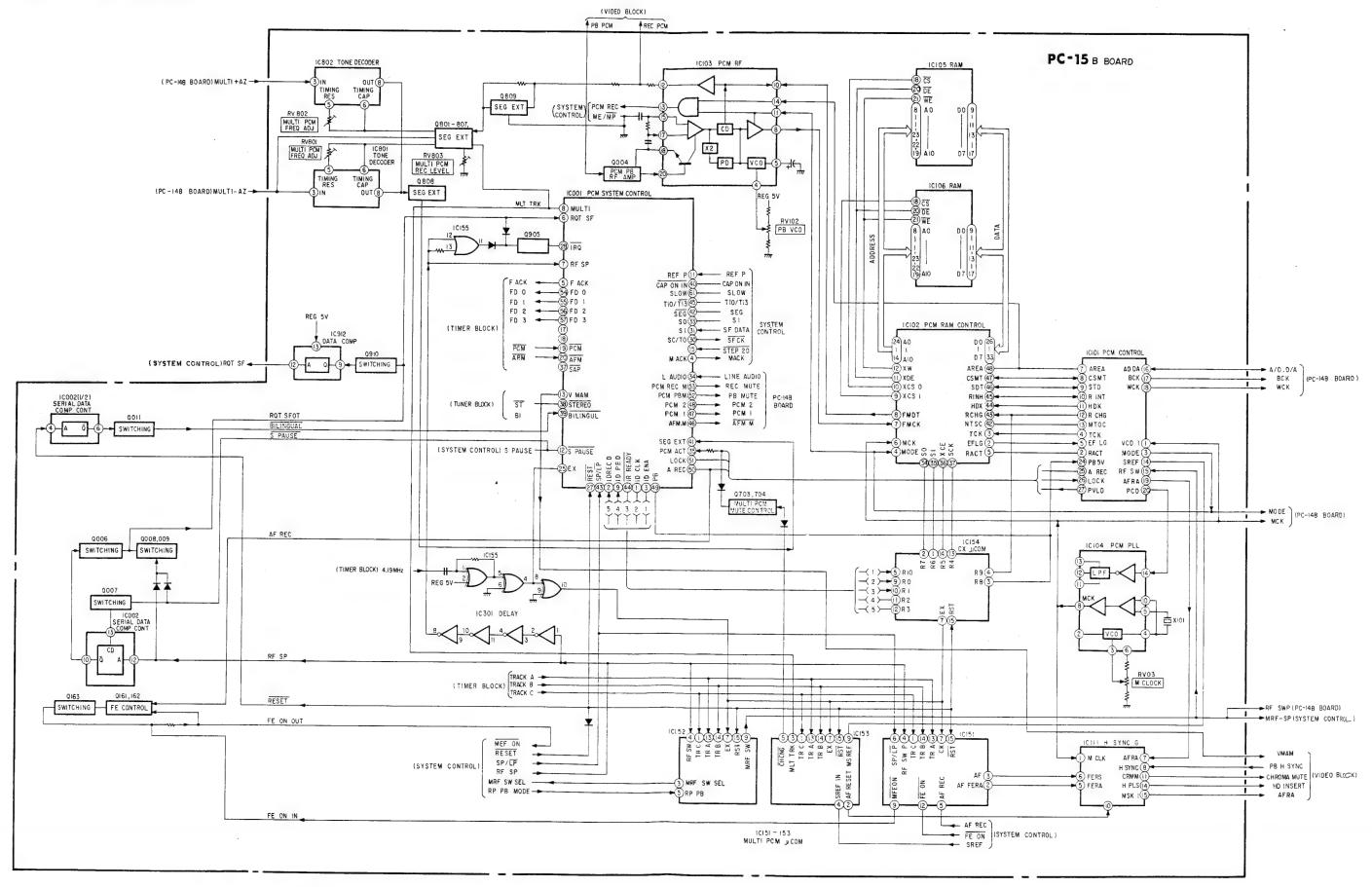
- 30

#### **HEADPHONE STANDARD LEVEL**

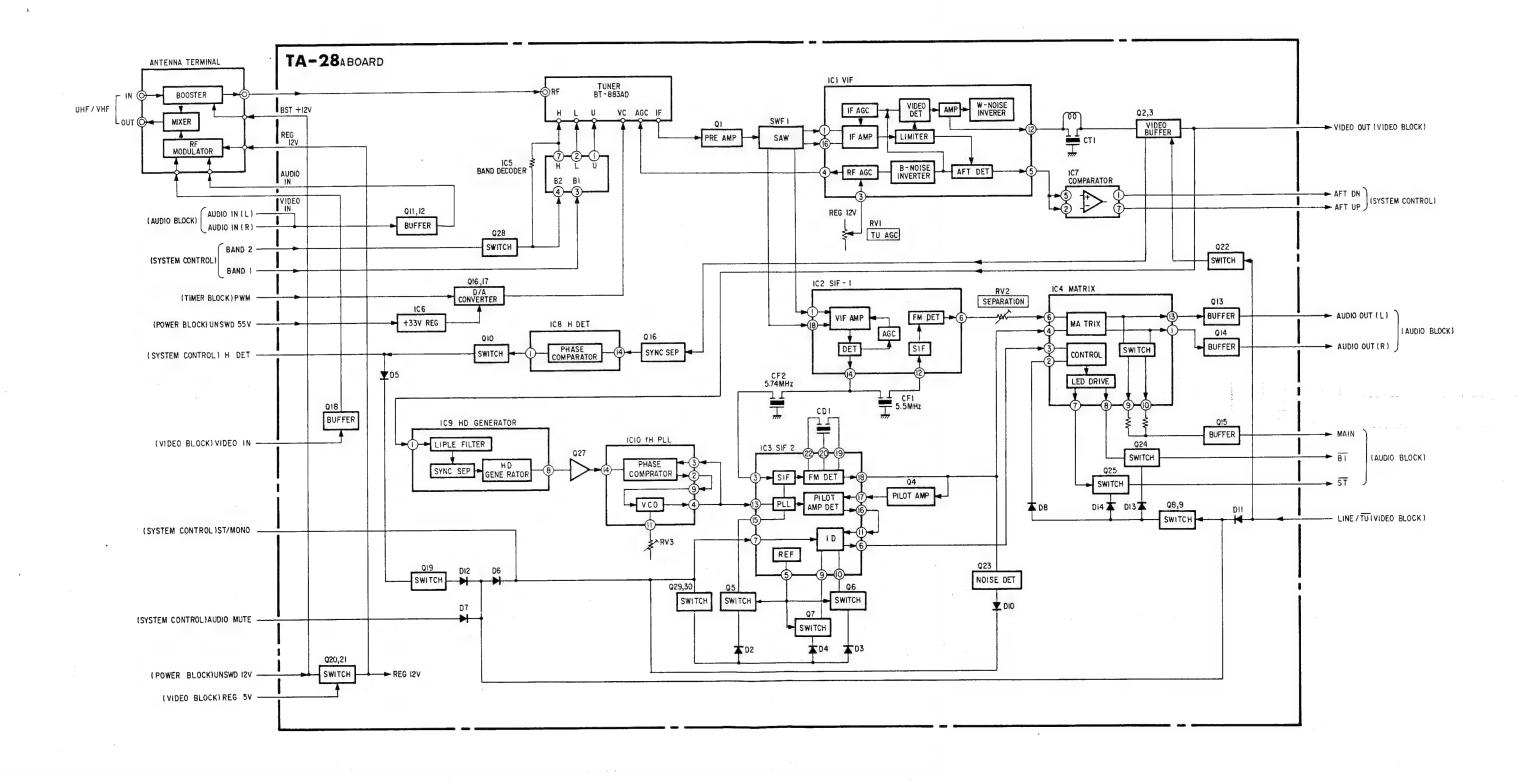


AFM
- REC/PB SYSTEM -

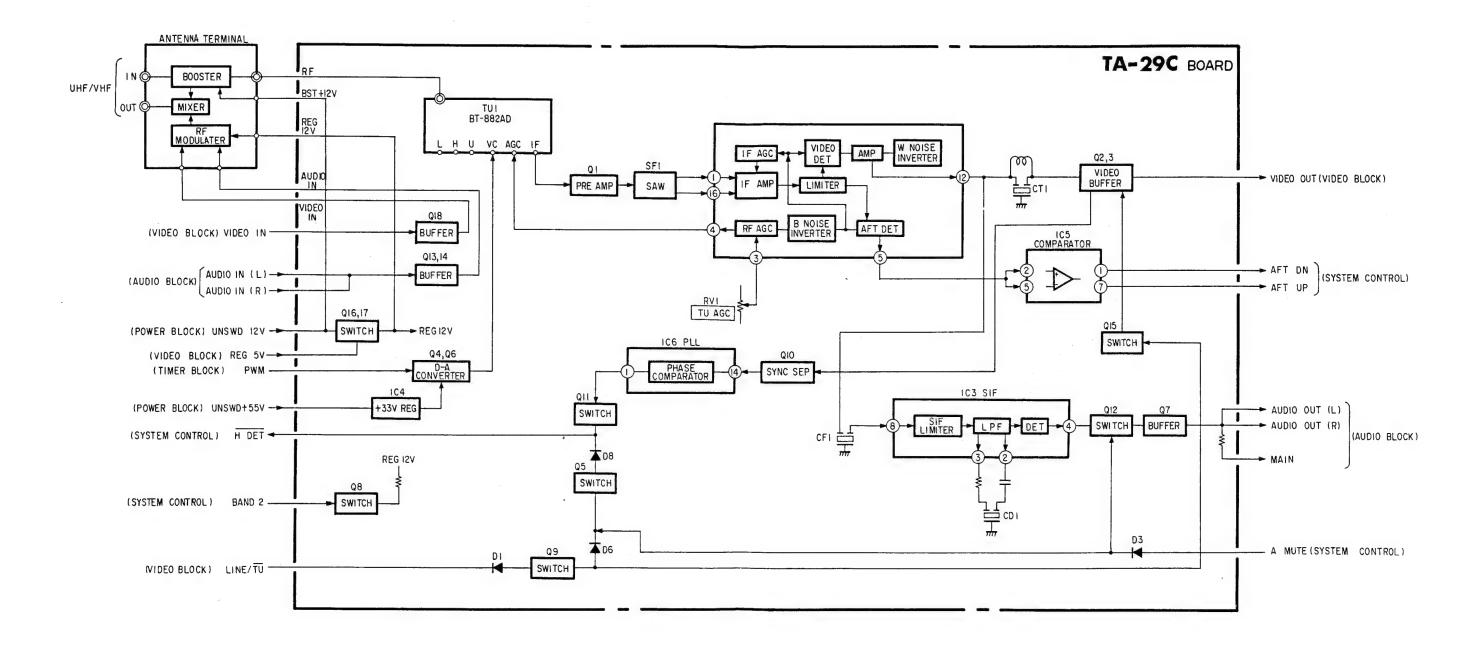


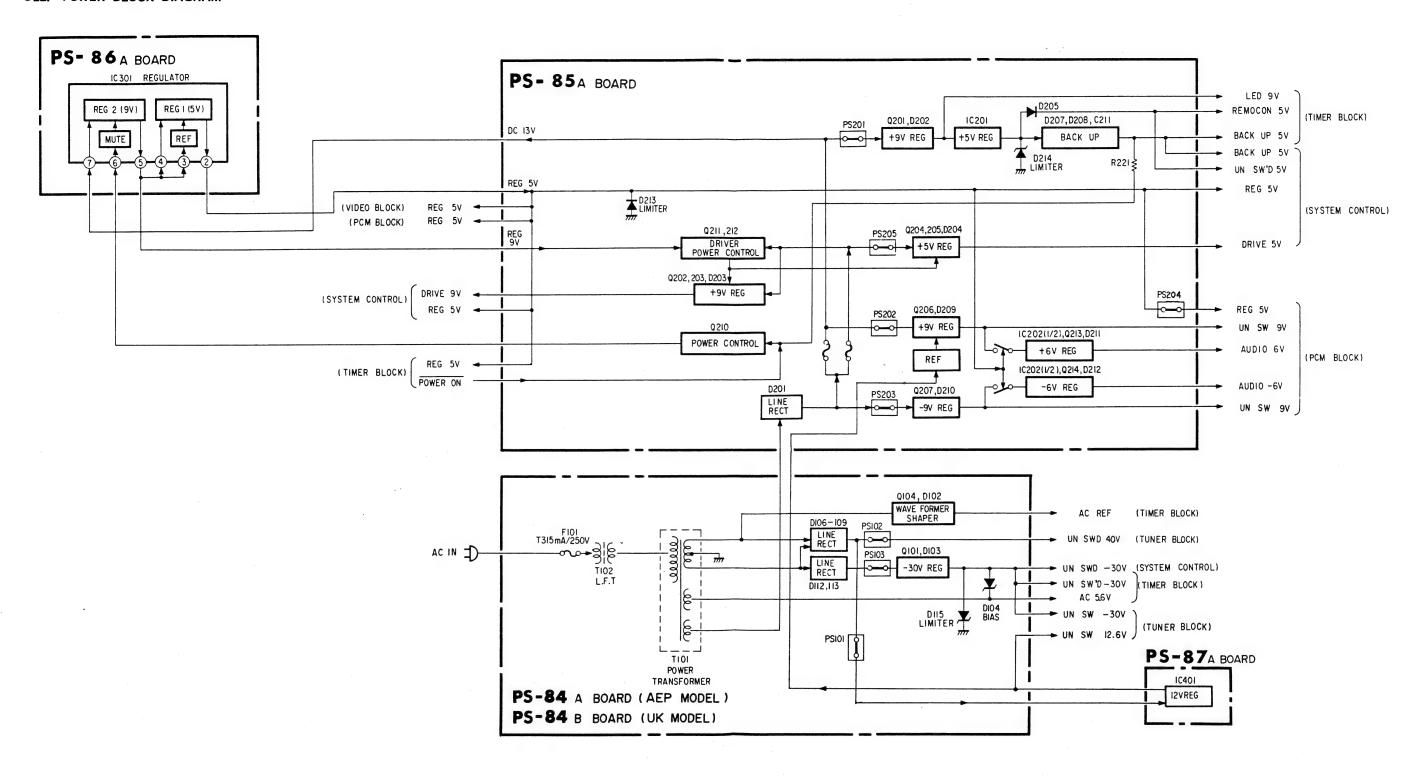


### 3-20. TUNER BLOCK DIAGRAM (AEP MODEL)

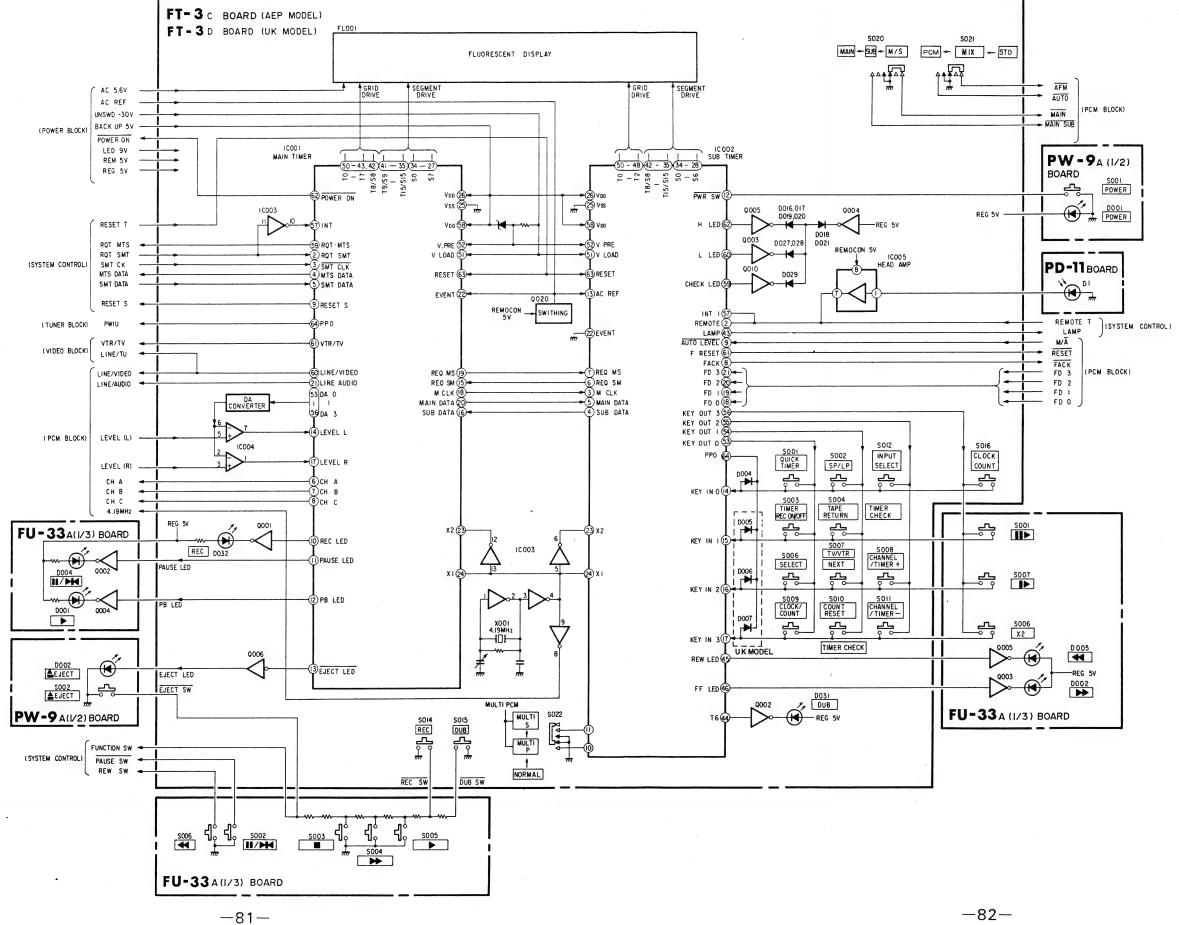


#### 3-21. TUNER BLOCK DIAGRAM (UK MODEL)

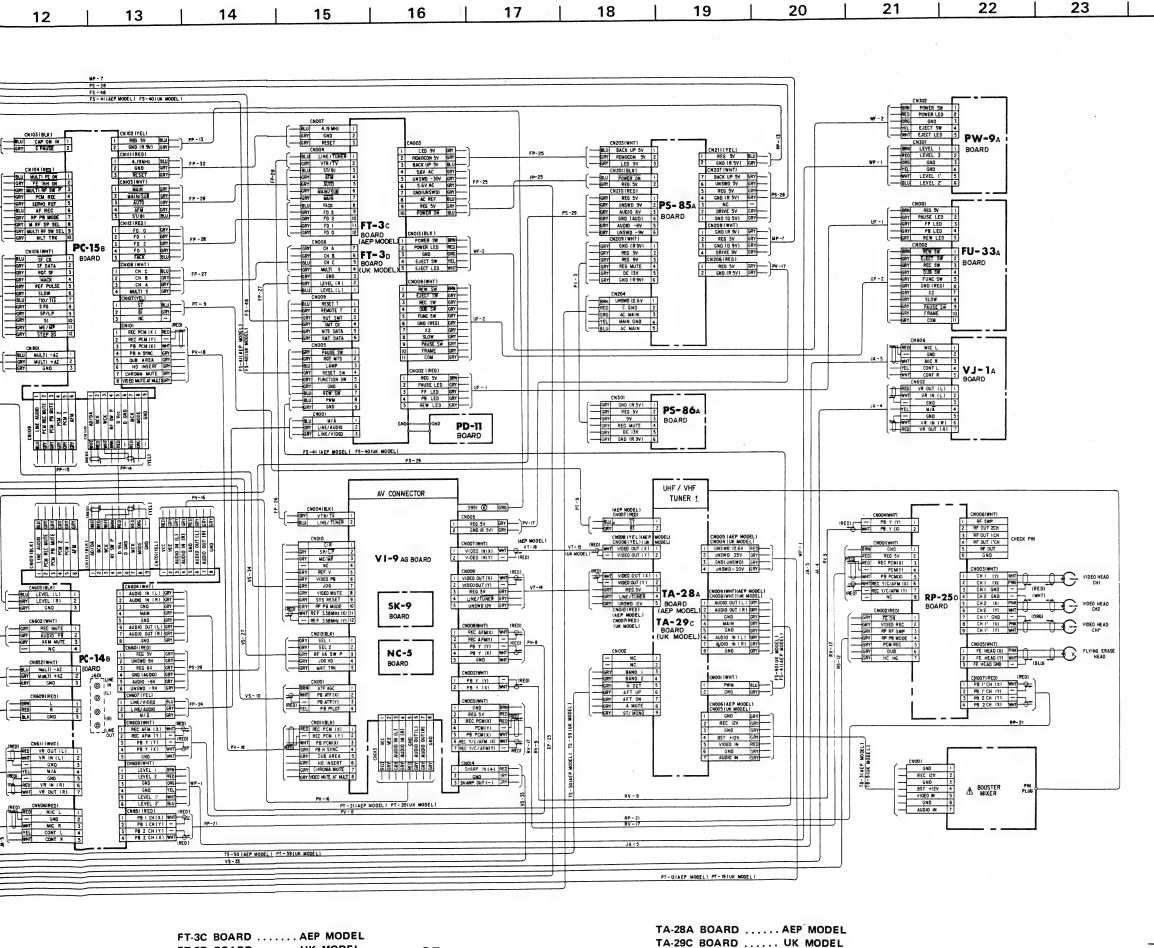




#### 3-23. TIMER BLOCK DIAGRAM



مست با بدق البني بي " إلى المستقد الديا المؤا "السيد بي " إلى



FT-3D BOARD ..... UK MODEL

-85-

Note: The components identified by shading and man are critical for safety. Replace only with part number specified.

26

25

27

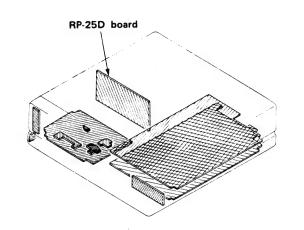
-86-

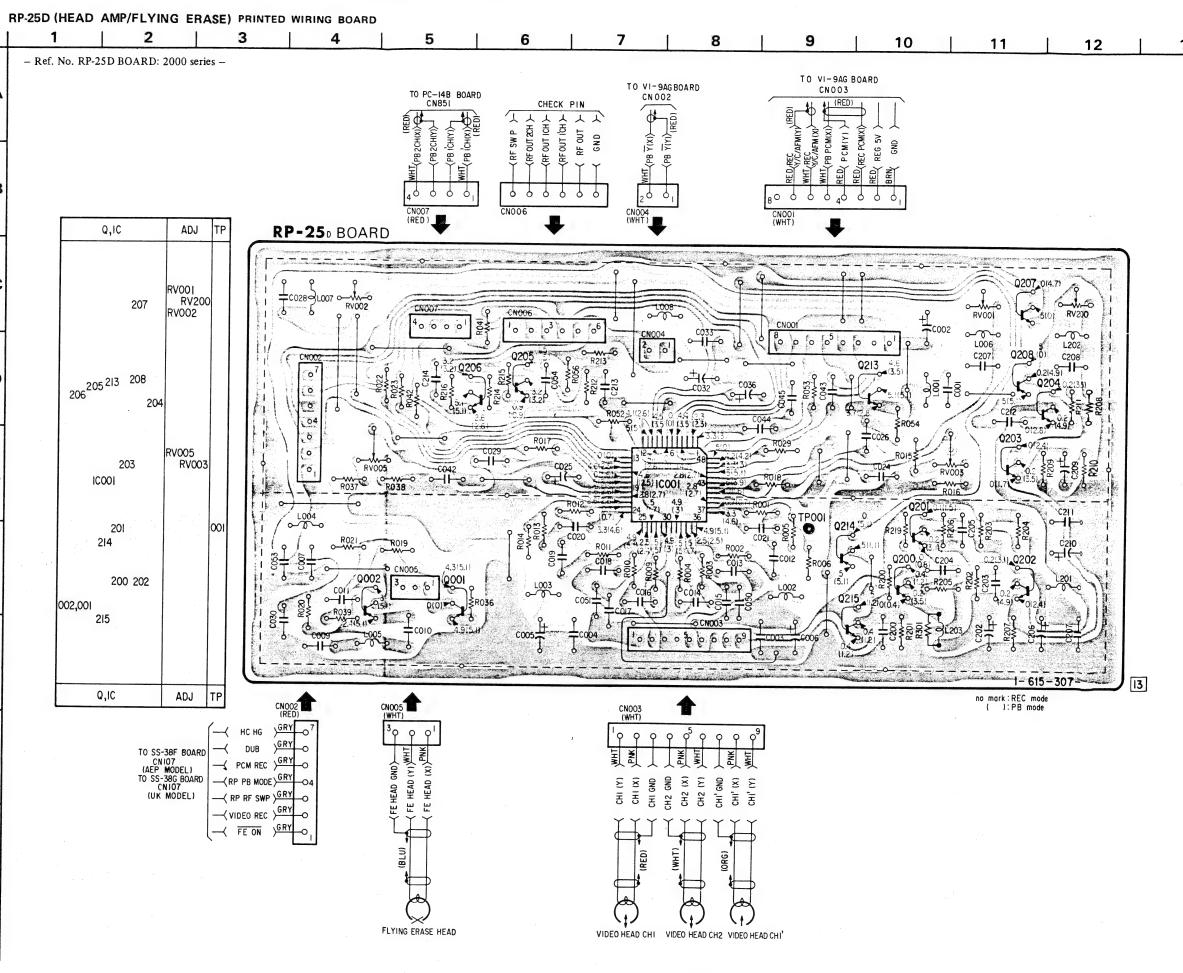
### VIDEO VIDEO

### 4-2. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

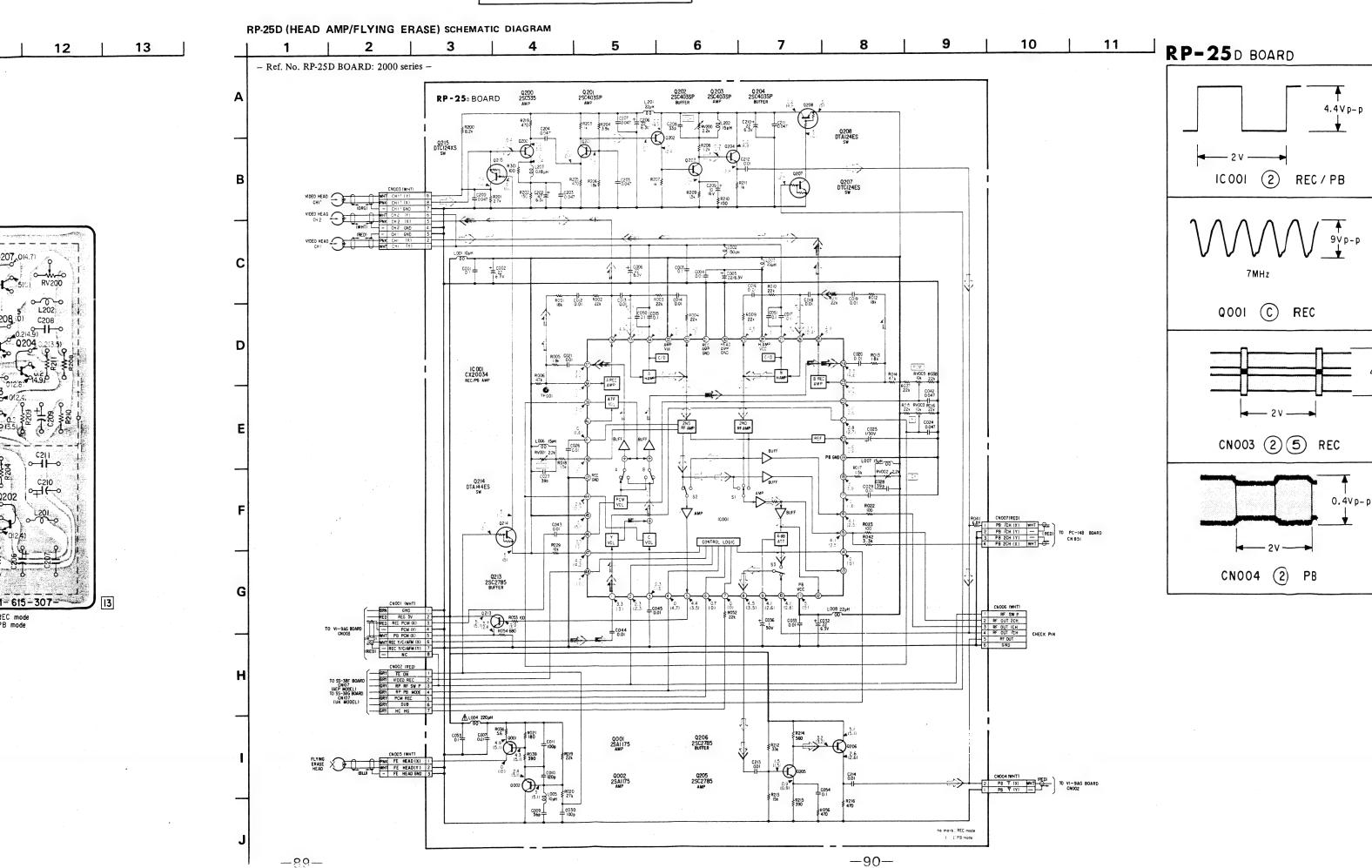
- O— : parts extracted from the component side.
- parts extracted from the conductor side.
- conductor side pattern.
- : B + pattern.
- Digital transistor (RP-25D : Q207, 208, 214, 215) transistor with resistors

Refer to the RP-25D board schematic diagram for digital transistor.

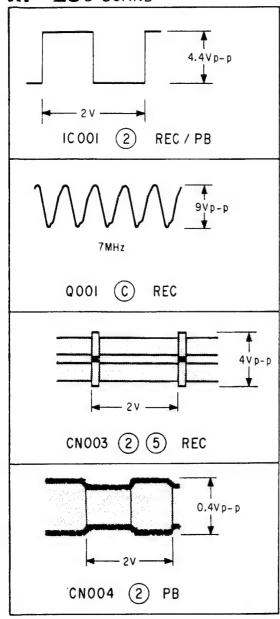




VIDEO VIDEO



## RP-25D BOARD



- All capacitors are in  $\mu F$  unless otherwise noted, pF:  $\mu \mu F$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/6W unless otherwise noted.
- $k\Omega$ : 1000 $\Omega$ ,  $M\Omega$ : 1000 $k\Omega$ .
- All variable and semi-fixed resistors have characteristics curve B. unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel disignation.
- : adjustment for repair.
- : B + bus.
- --- : B bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10 $M\Omega$ )

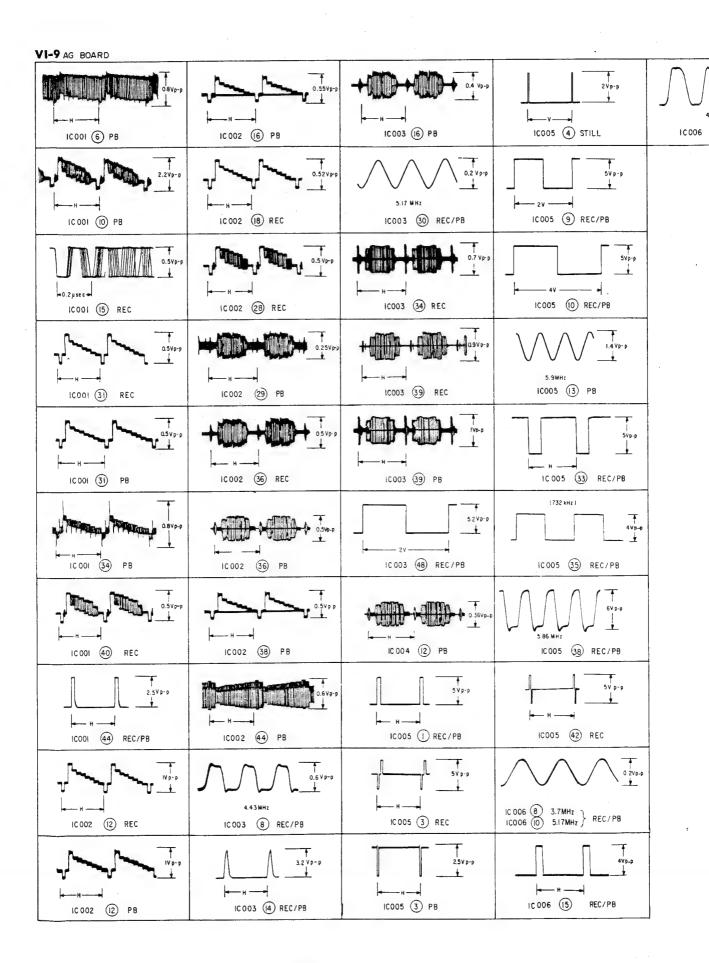
Note: The components identified by shading and mark A are critical for safety. Replace only with part number

When indicating parts by reference number, please include the board name.

#### Signal path

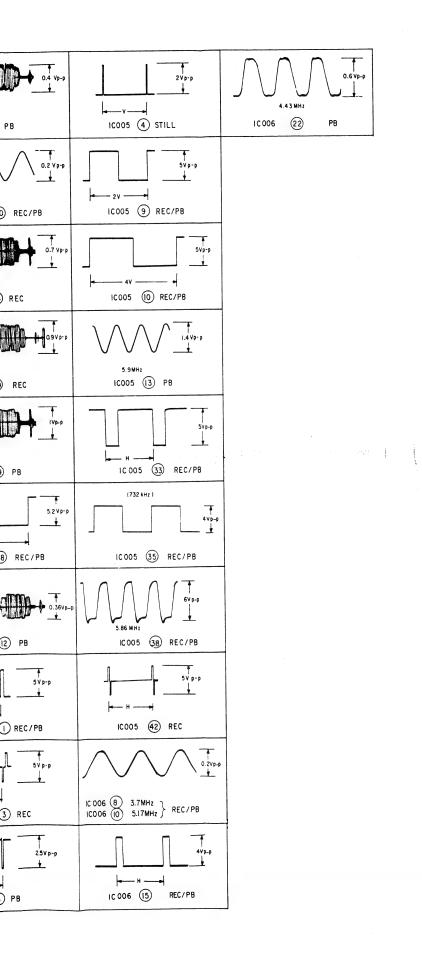
■> :REC Y & CHROMA SIGNAL

:PB Y & CHROMA SIGNAL # :REC AUDIT S TOUL

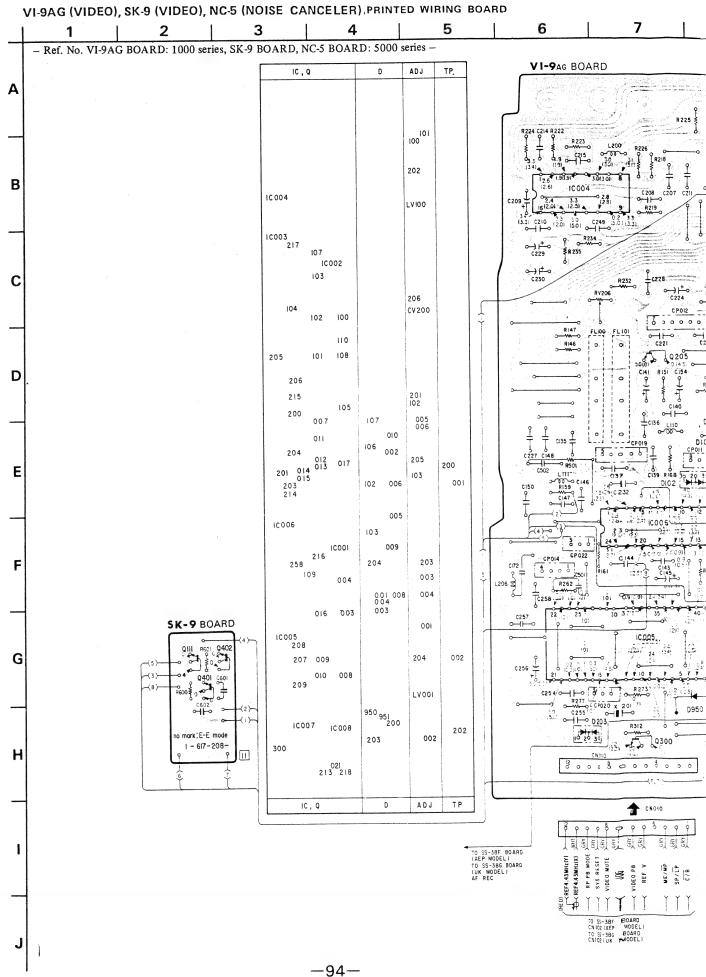


(22)

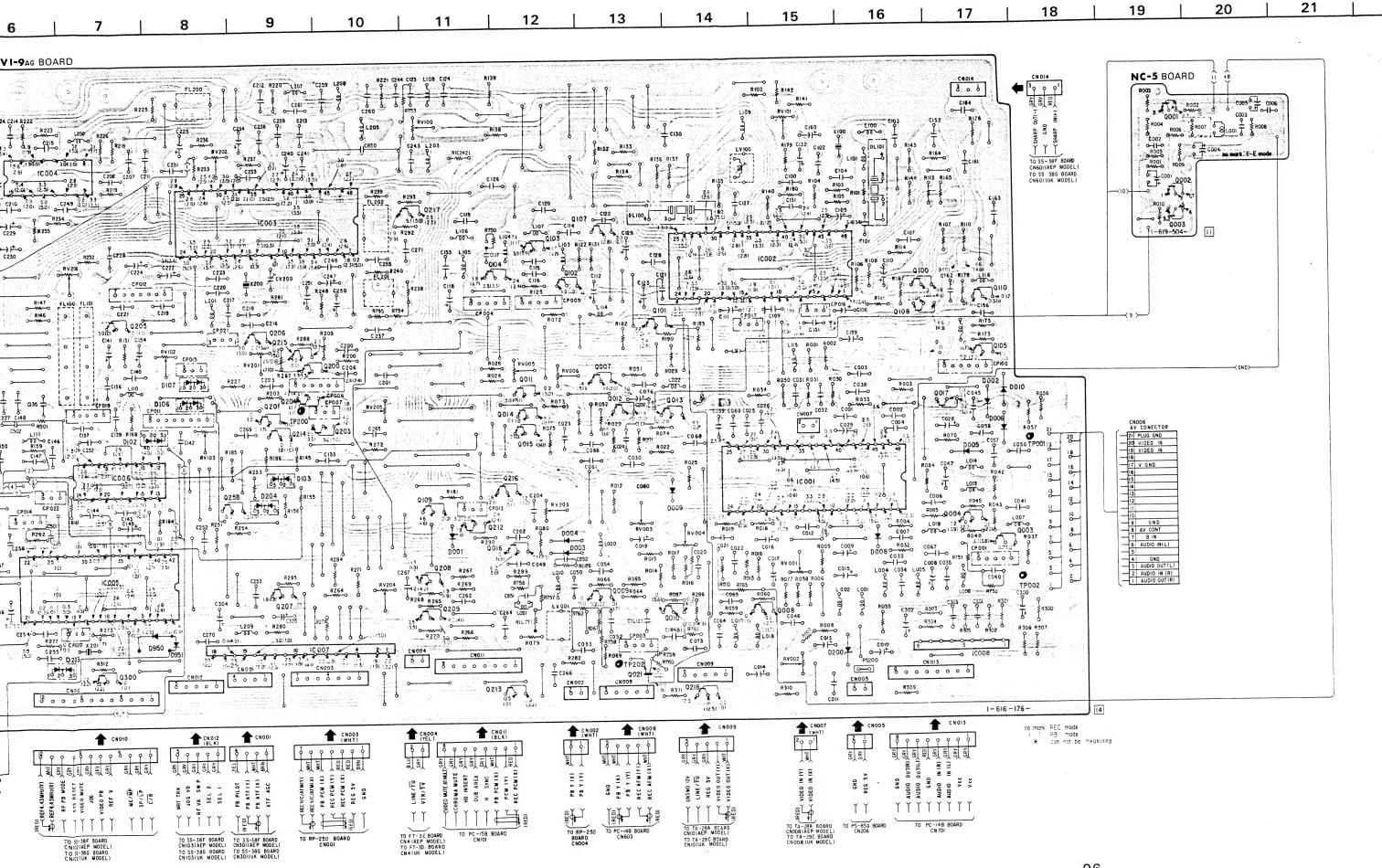




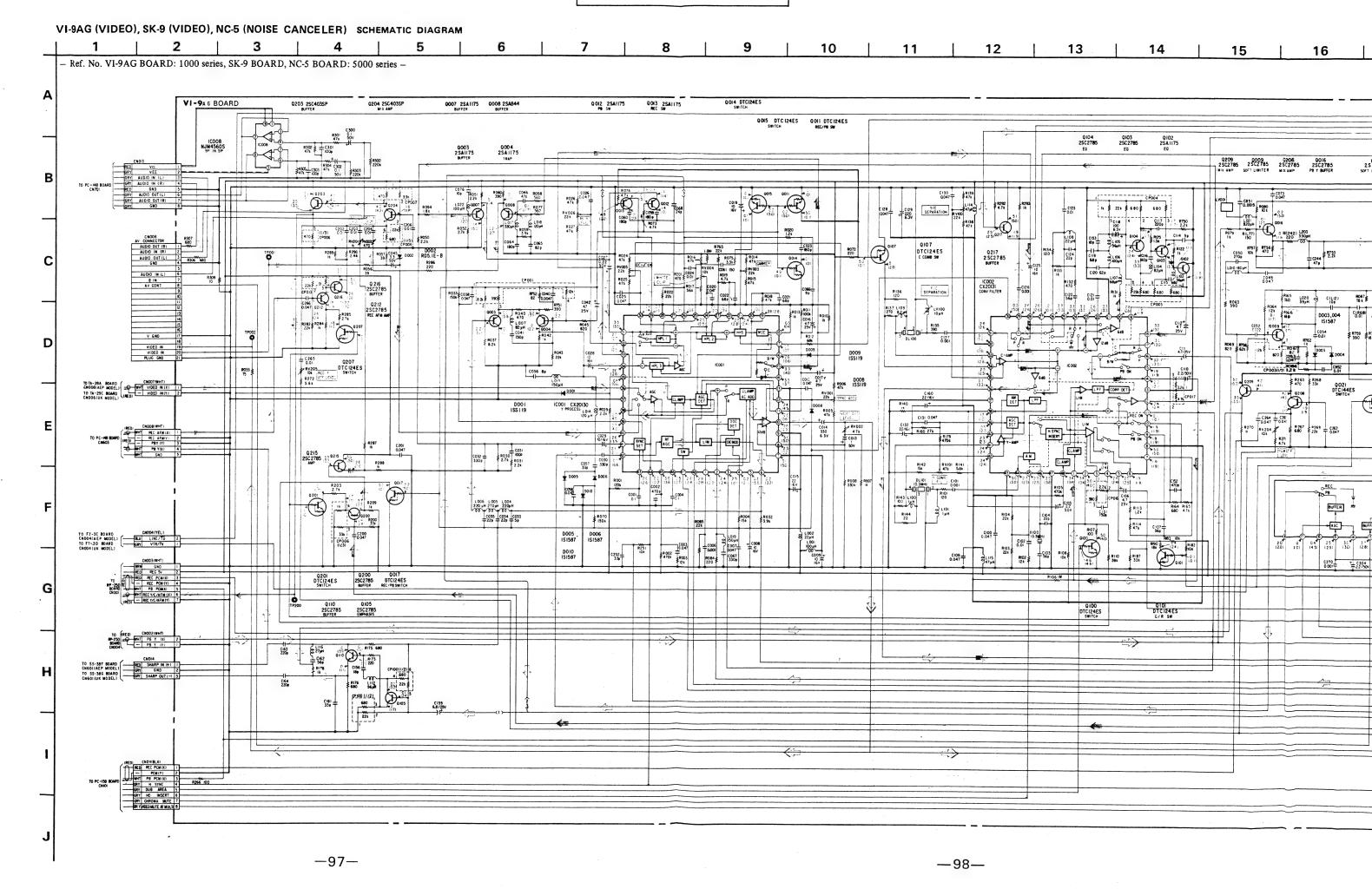
• All capacitors are in  $\mu F$  unless otherwise noted, pF :  $\mu \mu F$  50WV or less are not indicated except for electrolytics and tantalums. • All resistors are in ohms, 1/6W unless otherwise noted.  $k\Omega:1000\Omega, M\Omega:1000k\Omega.$  All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted. • inonflammable resistor. • tusible resistor. : panel disignation. • adjustment for repair. • : B + bus. • --- : B - bus. The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator. • All voltage are dc measured with a VOM (10M $\Omega$ ) Note: The components identified by shading and mark A are critical for safety. Replace only with part number When indicating parts by referthe board name. VI-9AG board : parts extracted from the component side. : parts extracted from the conductor side. : conductor side pattern. B + pattern. • Digital transistor (VI-9AG: Q002, 011, 014, 015, 017, 021, 100, 101, 107, 108, 109, 111, 201, 205, 207, 213, 214, 218, 258, 300, 401) transistor with resistors. Refer to the VI-9AG board schematic diagram for digital tran-

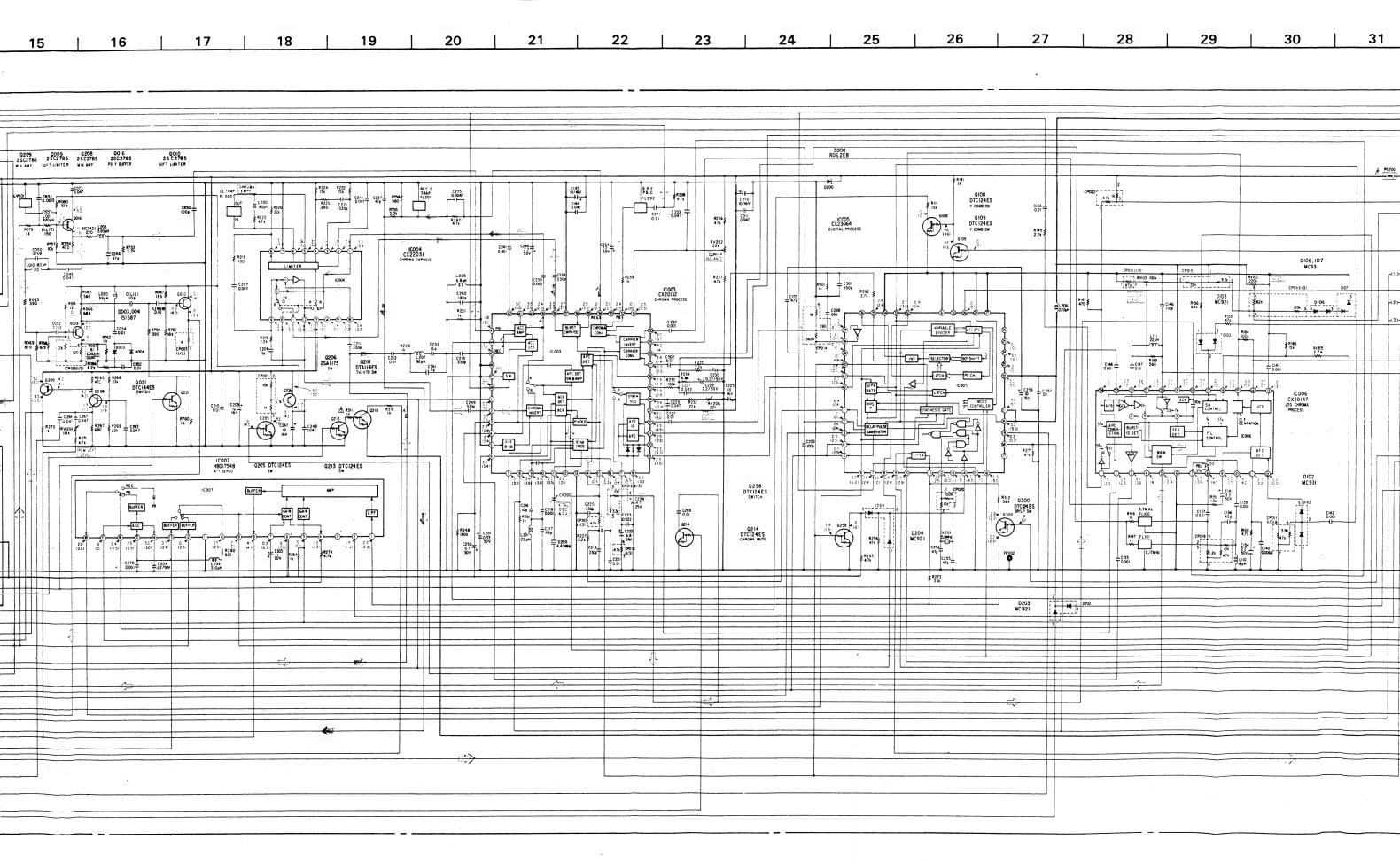


-93-



-95-





35 SK-9 BOARD 12 mark | E-E mos Q40I DTCI44ES APC TIME CONSTANT SWITCH QIII DTC124ES INVERT NC-5 BOARD CP015 Q001-003 2SC2785 Σ'n R008 + C146 C005 R010 16V \$3.3k RI55 471 3 1 DIO3 RI84 R005 12k 1.2k 22 pH \* \* ≹ R186 15 k R185 2 7 ii R159 CN005

REG 5v GRY TO P5-85A BOARD CN206 C143 fn 3fx CLF GENRATION MAIN SW AFC DET TO SS-38F BOARD CN102(AEP MODEL) TO SS-38G BOARD CN102(UK MODEL) RI51 333 158 50V C136 43 p D950,951 ISSI 19 R168 ≱ A 0950 -C154 | D951 (©) | ORC | TO SS-38F BOARDIASP MODEL | TO SS-38G BOARDIASE MODEL | TO SS-38G BOARDIASE MODEL | TO SS-38F B Signal path REC Y SIGNAL = :PB Y SIGNAL REC CHROMA SIGNAL ⇒ :PB CHROMA SIGNAL REC Y & CHROMA SIGNAL > :PB Y & CHROMA SIGNAL

29

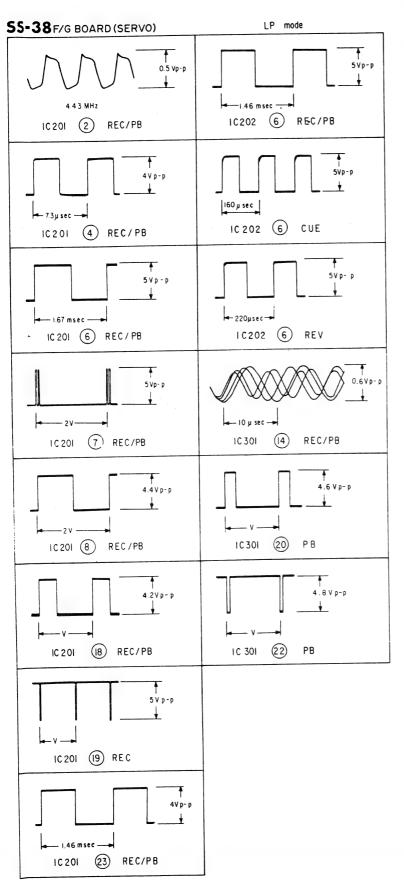
30

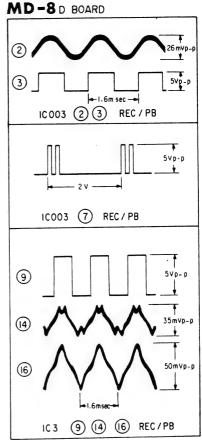
31

32

33

34





Digital transistor
 Q207, 211, 21
 sistor with resistor
 Refer to the MD
 digital transistor.

: parts extr.

: parts ext:

: conductor

TE-2A board

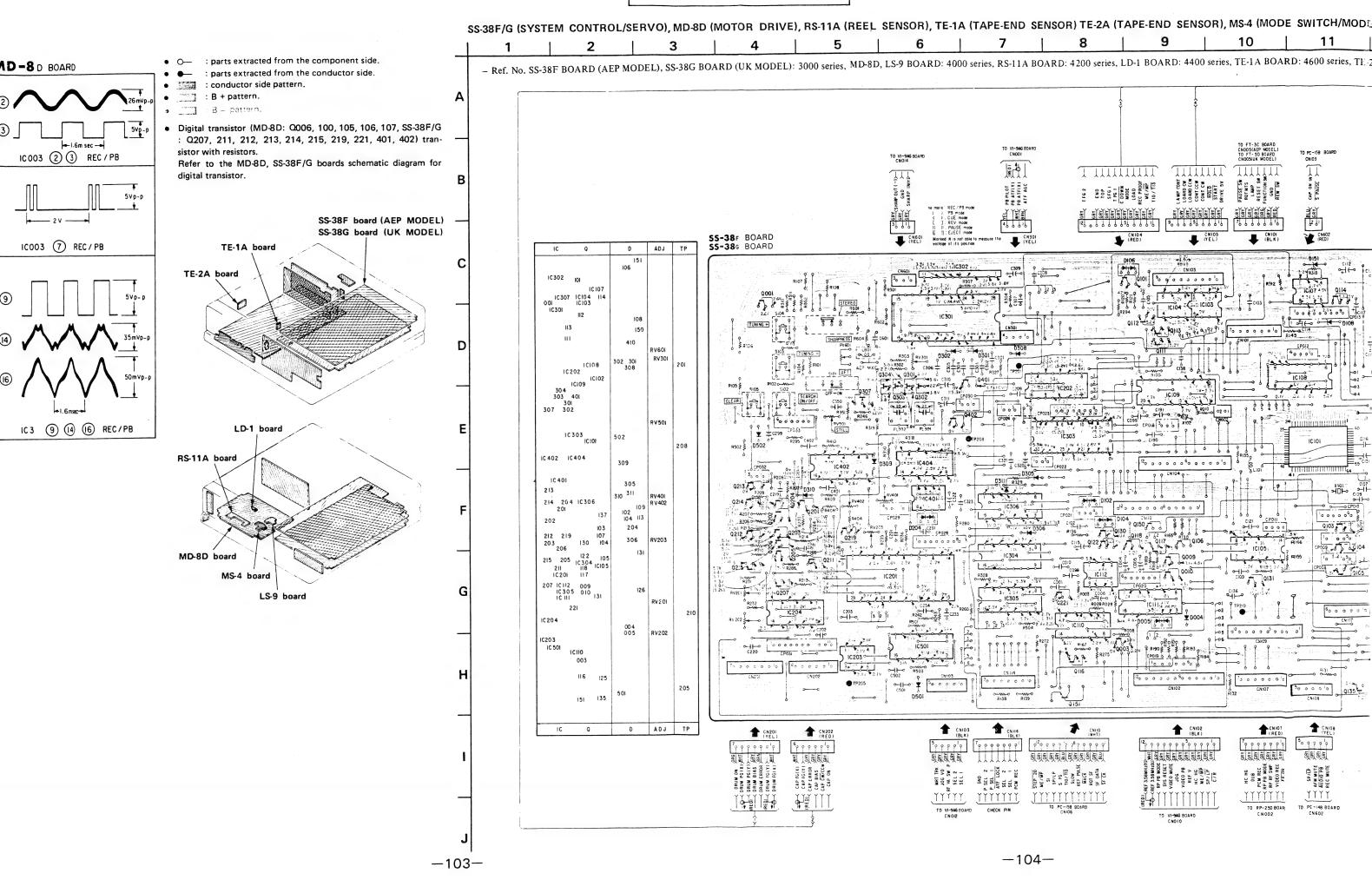
TE-1A

RS-11A board

MD-8D board

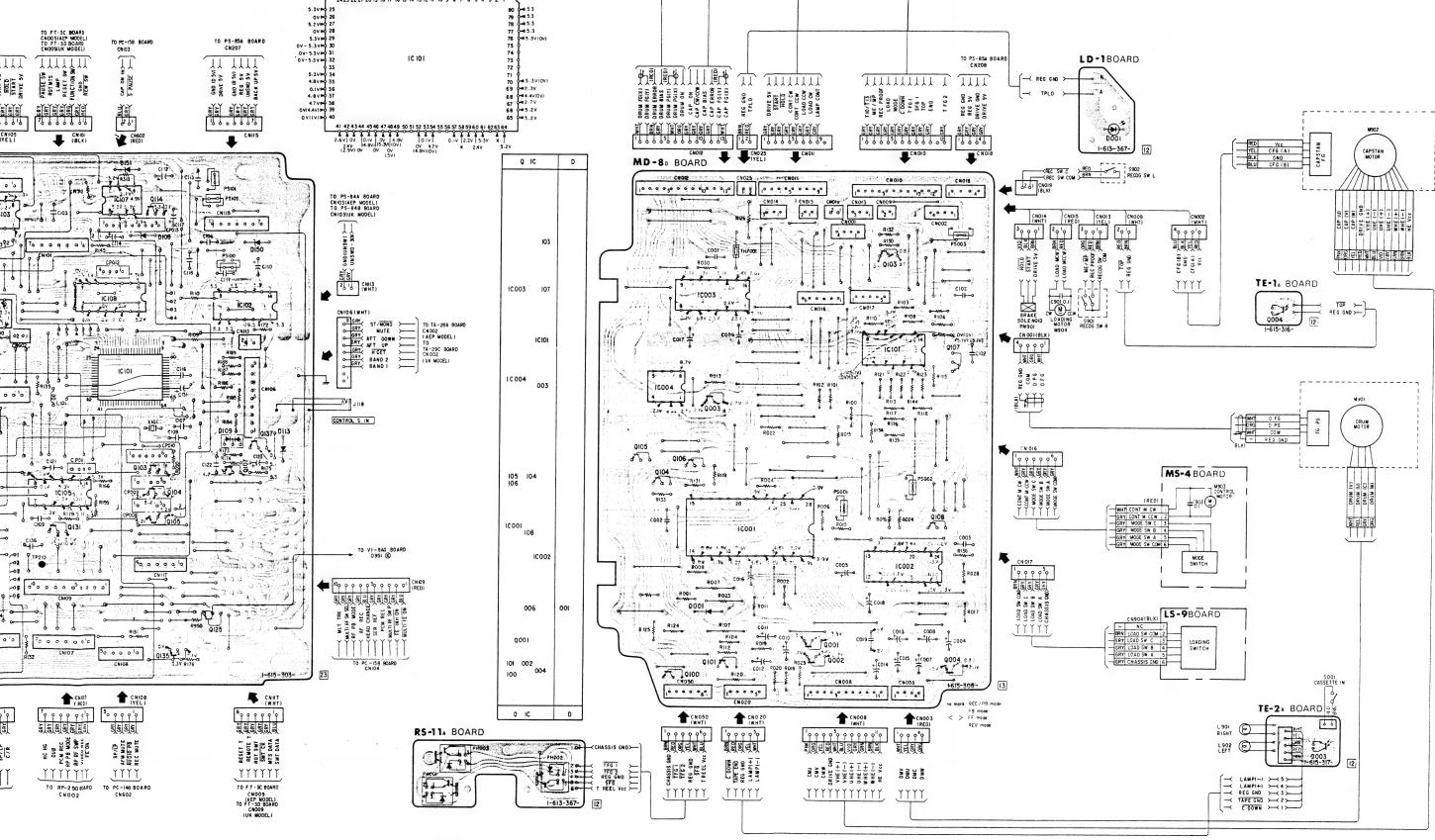
MS-4

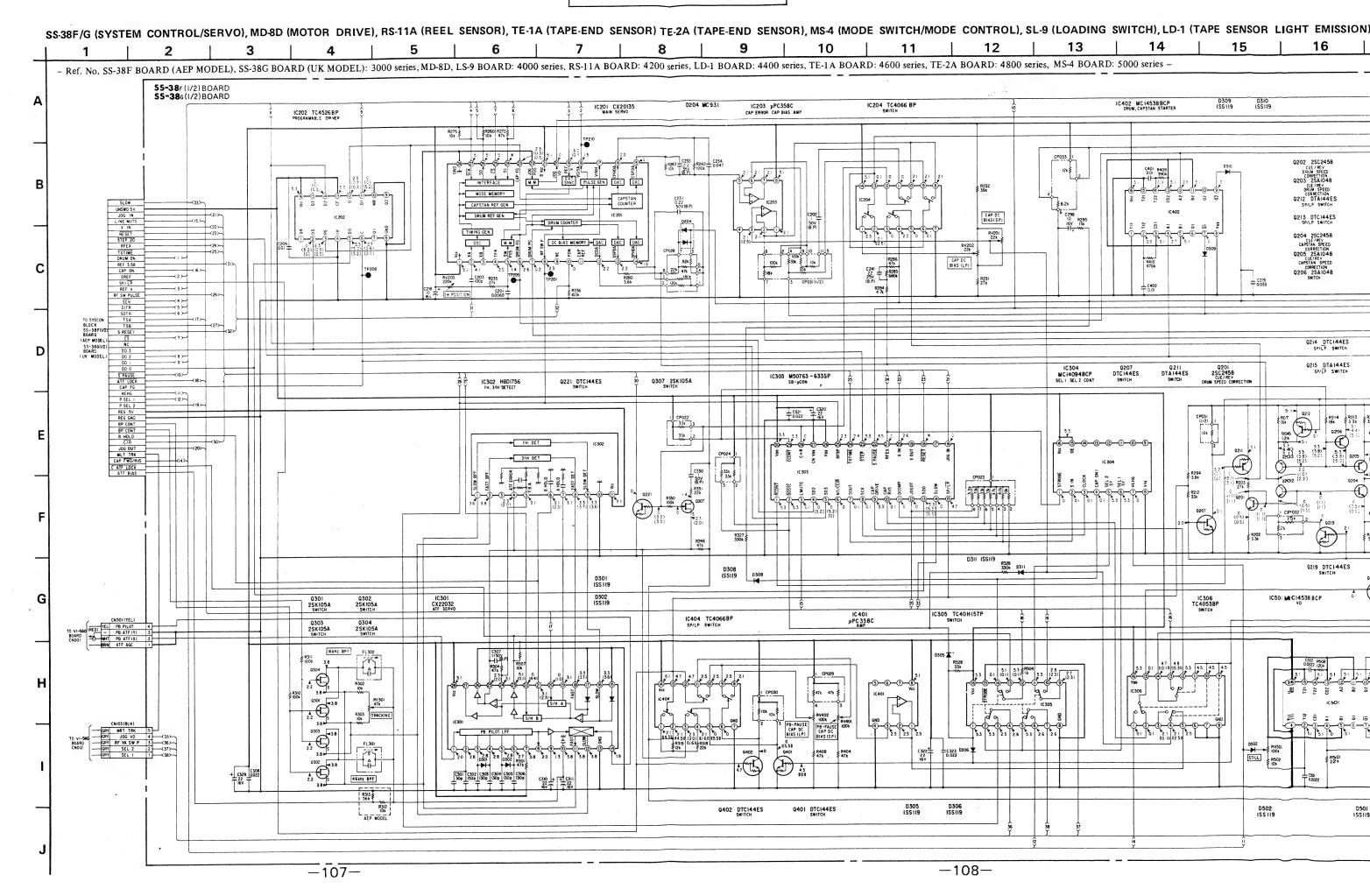
SERVO SERVO

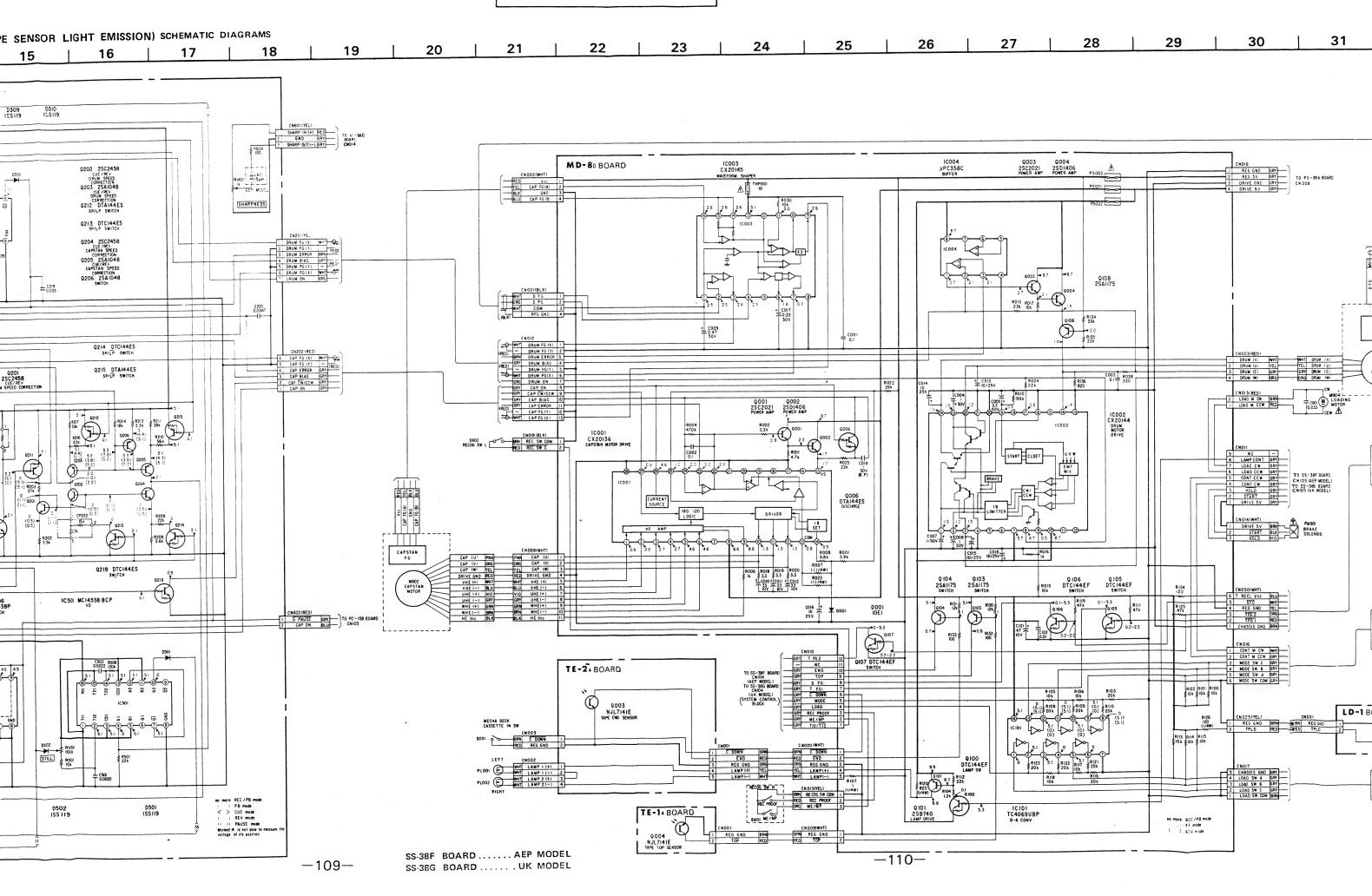


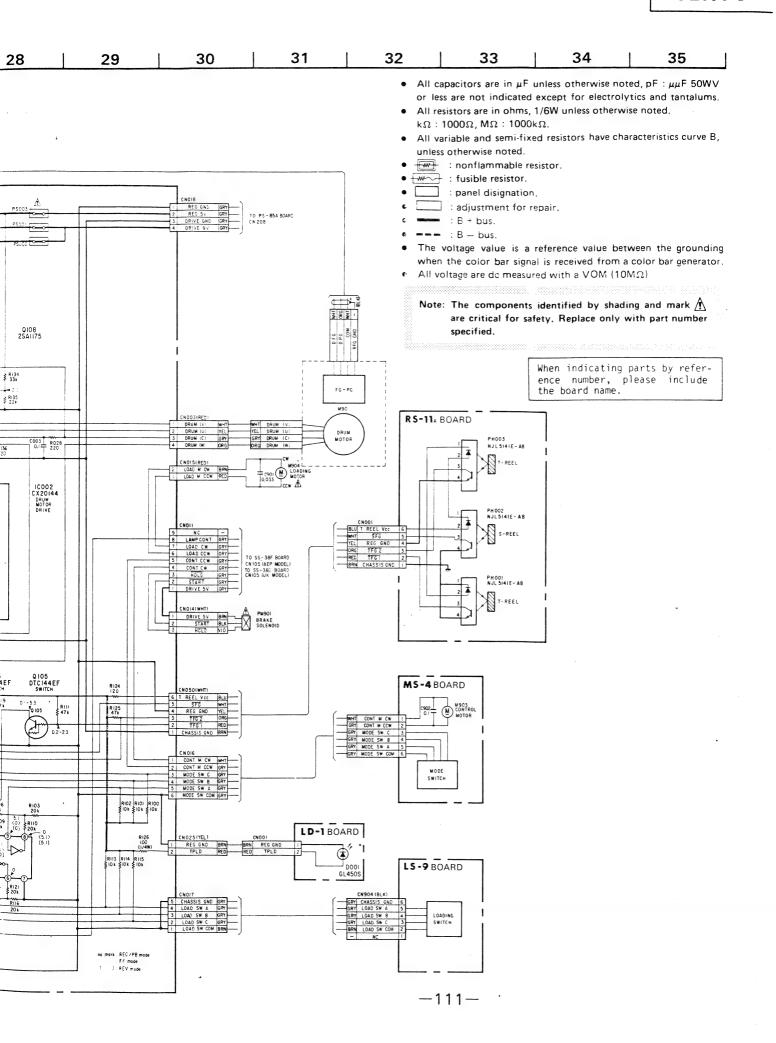
### SERVO SERVO

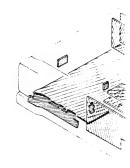
OR), MS-4 (MODE SWITCH/MODE CONTROL), SL-9 (LOADING SWITCH), LD-1 (TAPE SENSOR LIGHT EMISSION) PRINTED WIRING BOARDS 12 13 15 19 20 21 22 23 24 25 series, TE-1A BOARD: 4600 series, TE-2A BOARD: 4800 series, MS-4 BOARD: 5000 series -TO PS-85A BOARD CN207 TO PS-854 BOARD CN208 LD-1BOARD II MITTI 11 1111









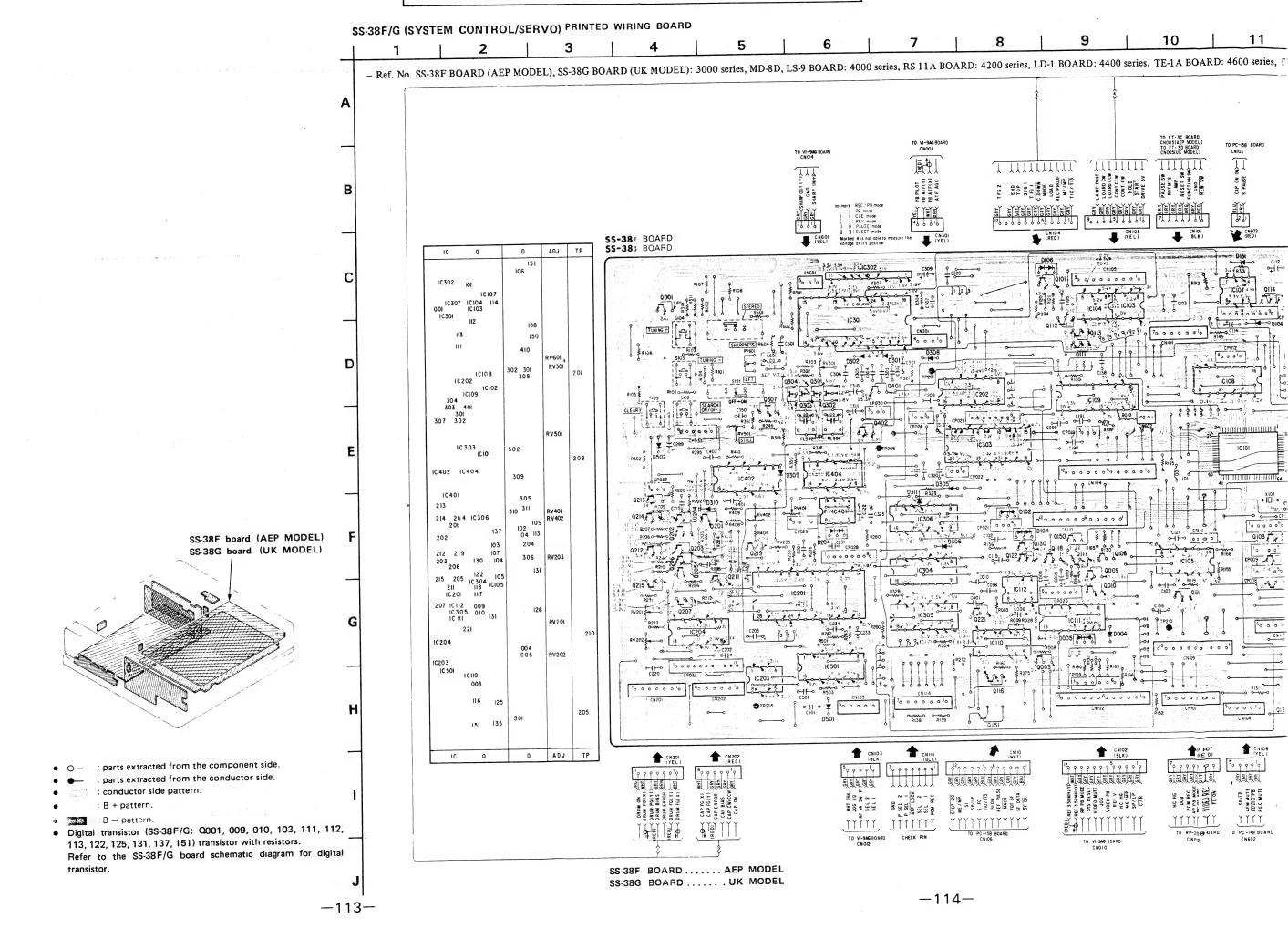


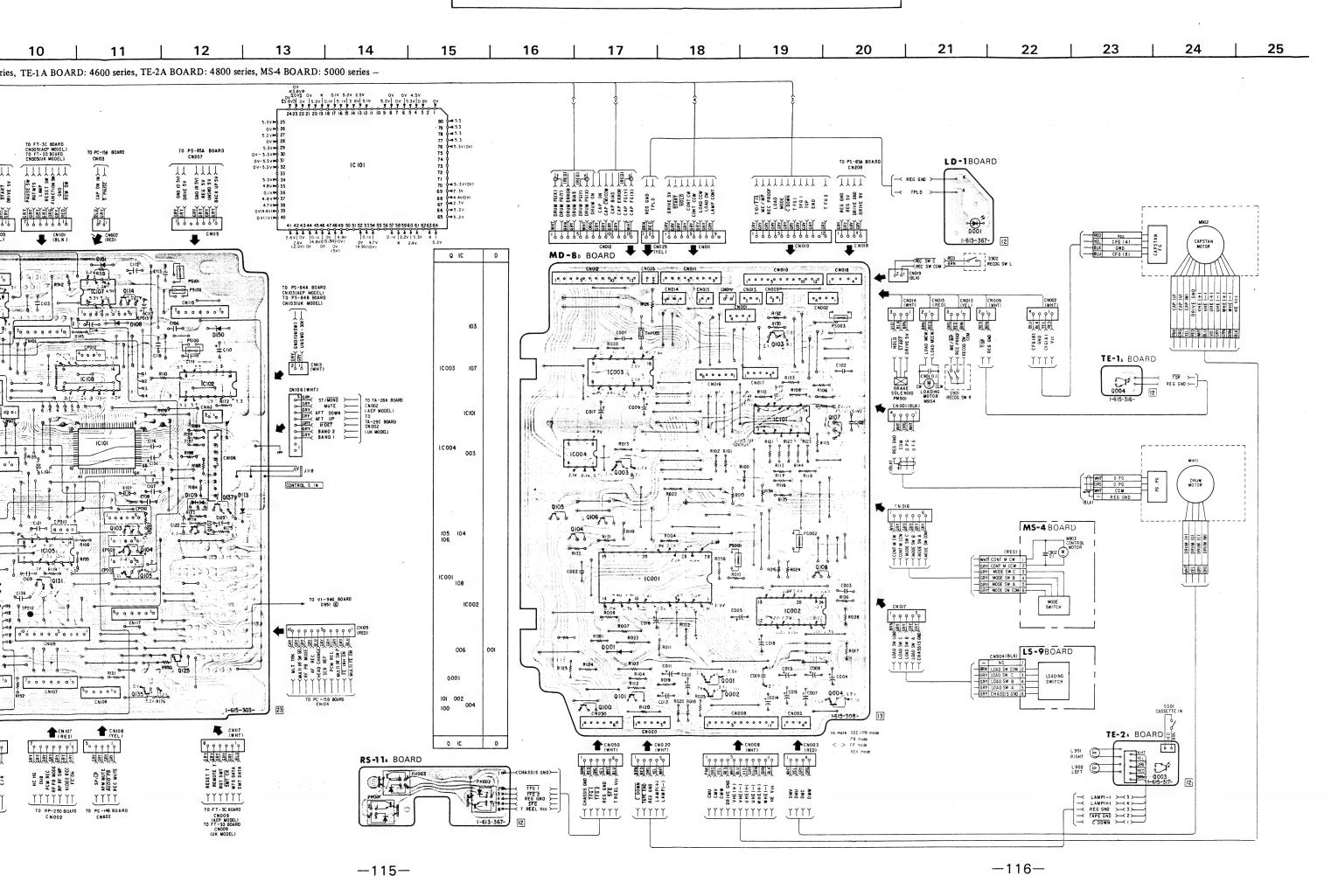
parts extracteparts extracte

: conductor sid : B + pattern.

• 8 - pattern

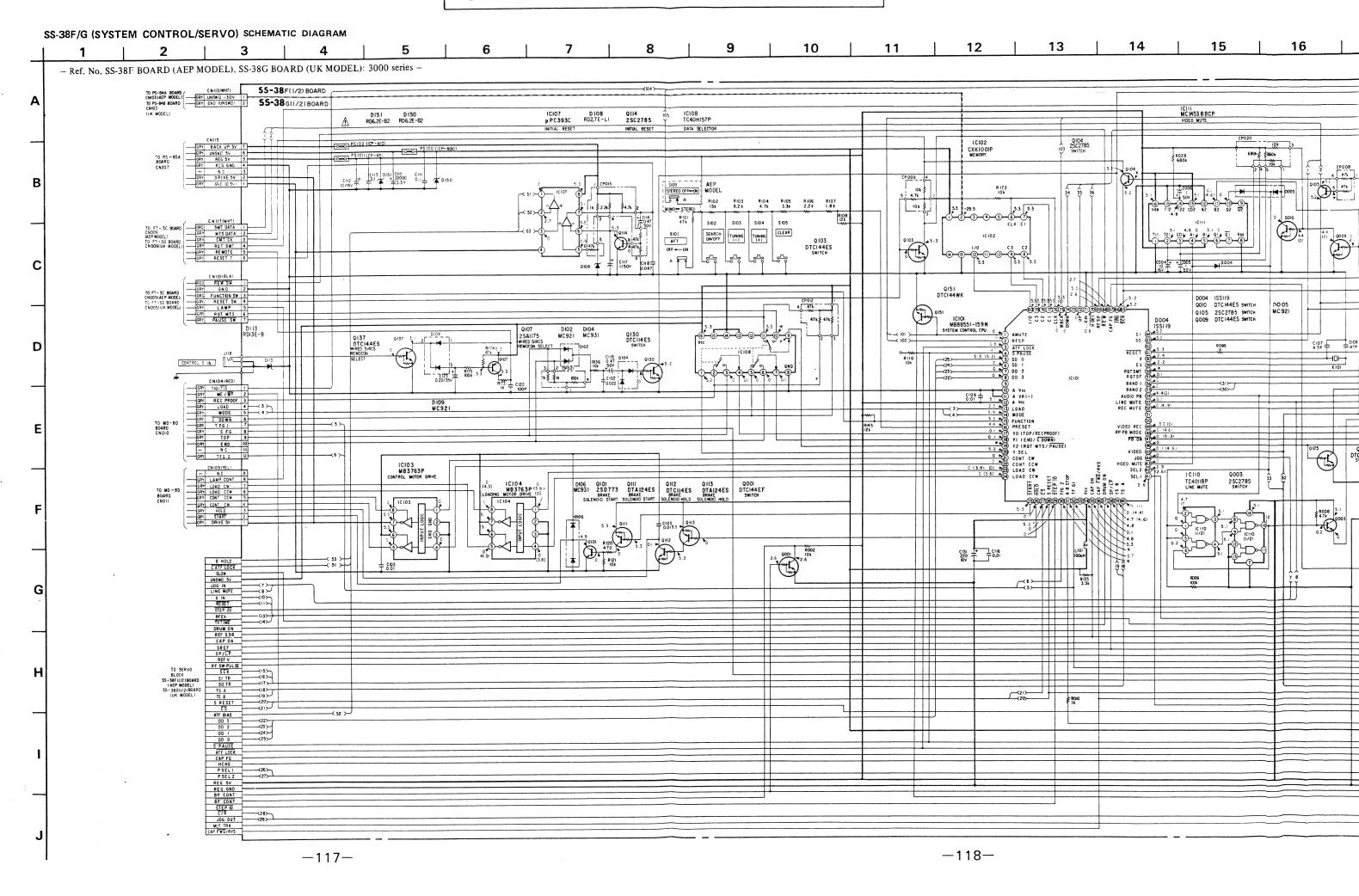
• Digital transistor (SS: 113, 122, 125, 131, 13 Refer to the SS-38F trans istor.





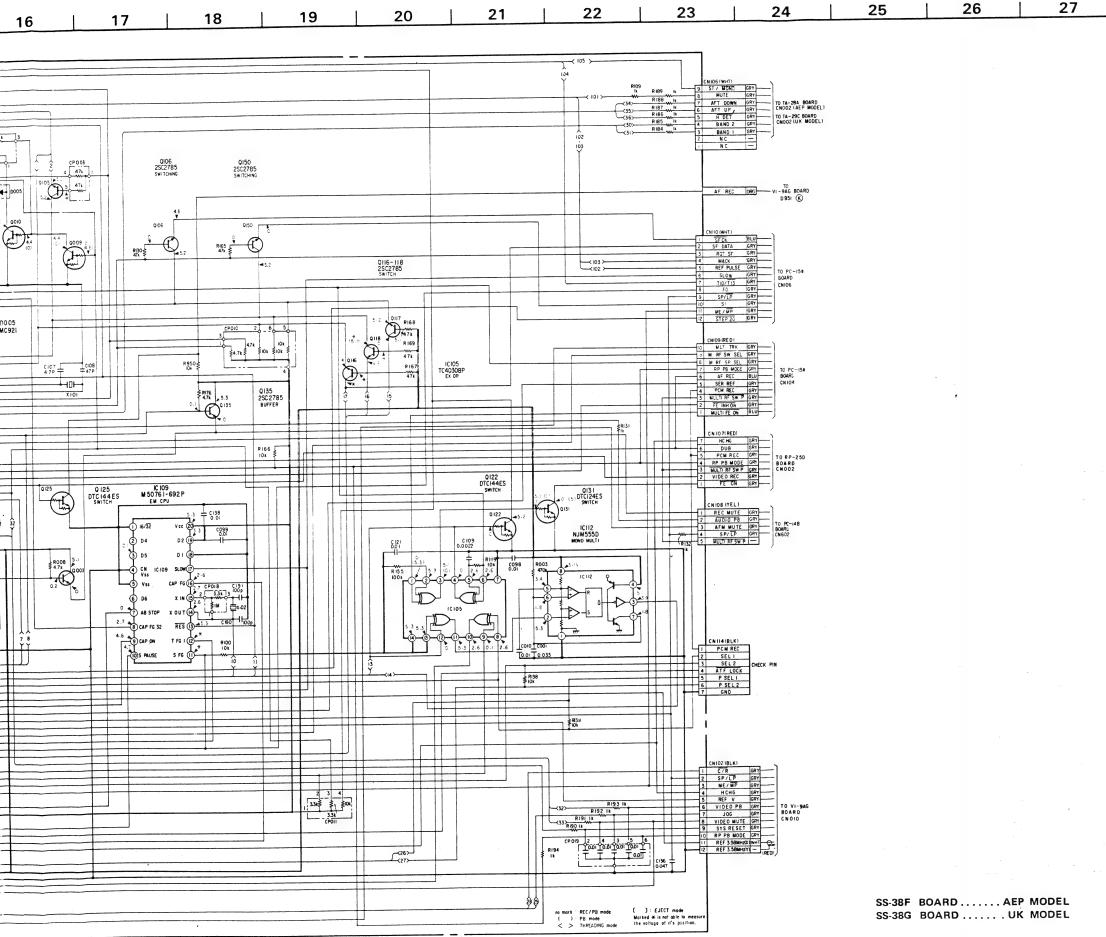
### SYSTEM CONTROL SYSTI

### SYSTEM CONTROL



### SYSTEM CONTROL

### SYSTEM CONTROL



• All capacitors are in  $\mu F$  unless otherwise noted, pF:  $\mu \mu F$  50WV or less are not indicated except for electrolytics and tantalums.

• All resistors are in ohms, 1/6W unless otherwise noted.  $k\Omega:1000\Omega,\,M\Omega:1000k\Omega.$ 

 All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.

: nonflammable resistor.

• tusible resistor.

• \_\_\_\_\_ : panel disignation.

• : adjustment for repair.

. B + bus.

• --- : B - bus.

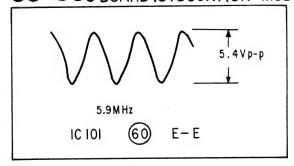
 The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.

• All voltage are dc measured with a VOM (10M $\Omega$ )

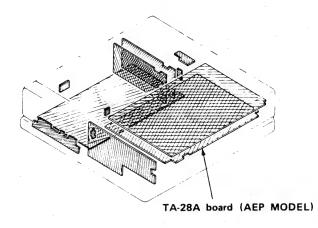
Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

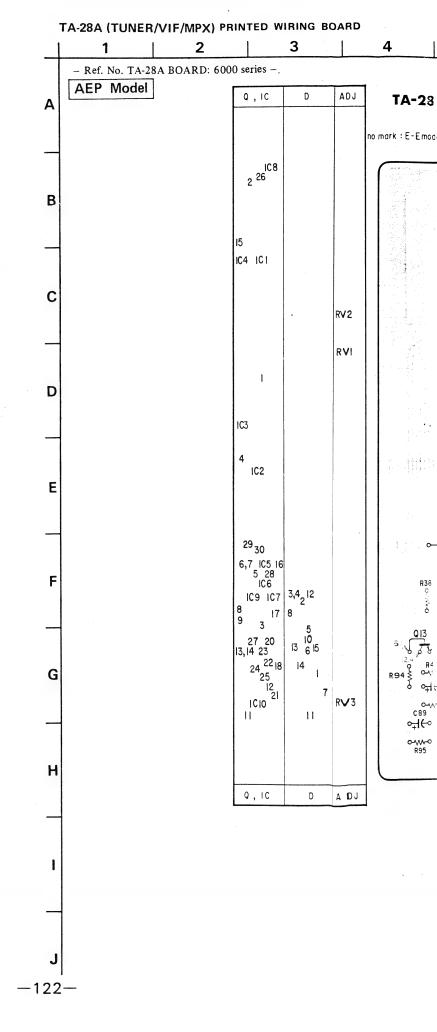
# \$5-38F BOARD (SYSCON) (AEP MODEL) \$5-38G BOARD (SYSCON) (UK MODEL)



### TUNER



- O— : parts extracted from the component side.
- • : parts extracted from the conductor side.
- : conductor side pattern.
- : B + pattern.
- ∃∃ : B pattern.
- Digital transistor (TA-28A: Q005, 006, 007, 008, 009, 020, 022, 027, 028, 029, 030) transistor with resistors.
   Refer to the TA-28A board schematic diagram for digital transistor.



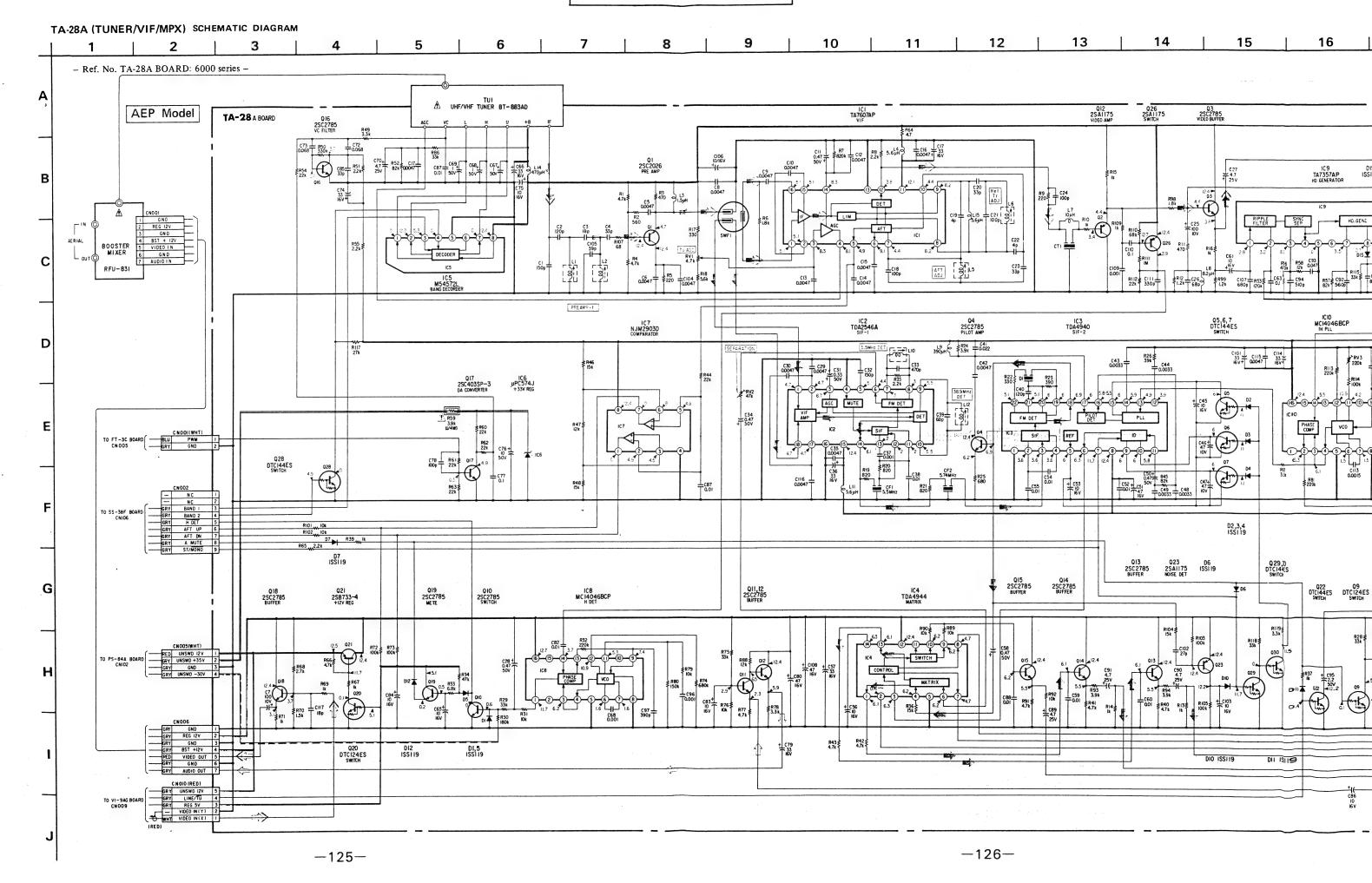
17 18 16 13 14 15 12 9 11 8 10 5 TA-28 A BOARD no mark : E-Emode C24 R9 L7 CTI RIO RIS GRY GRY GRY GRY GRY AUDIO IN 02 GND
VIDEO IN
BST +12V
GND
REG 12V
GND UHF/VHF TUNER RV2 BT-883AD BOOSTER MIXER RFU-831 CFI O CII5

O I O 3.9 9 CIOI 5.9 CIOI 9 CI C66 C67 0→1←0 0→1←0 675 9 9 +1 9 LI4 2016 °0-11-0€85 R51 Q Q C74 R55 Q-W-Q RIST RESO C78 P 5 6 7 8 IC7 C R28 R83 R84 DIO 1220 WO 0 12.4

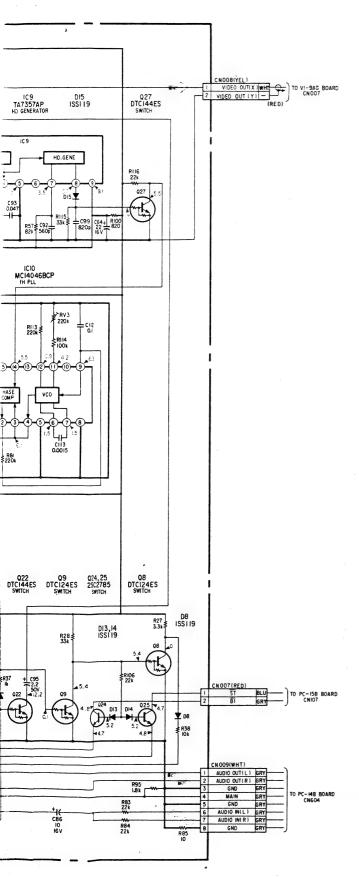
DIO 12 T C95 12.4 → C7 R70 O-WOR67 C65 R659 9D7 0 §<sub>R69</sub> 0-11-0 3 DII 0 H o TA CN5 CN8 CNIO CN6 07060504030201 1-615-774-4 (AET) (Y )TUO (COUTKY )TUO (WHT) 94 93 92 91 09 08 07 06 05 04 03 02 01 97969594939291 CN10 (RED) 95 94 93 92 91 (WHT) 98 9796 9594 93 92 91 UNSWD 12V LINE/TU REG 5V VIDEO IN (Y) -30v +35v 12 v ANDIO OUT
GND
VIDEO OUT
BST +12V
GND
REG 12V
GND GND AUDIO IN (! AUDIO IN (! GND MAIN GND AUDIO OUT ( TO FT-3C BOARD CN005 SRY CRY GRY GRY TO VI-9AG BOARD TO PC-I4B BOARD TO PS-84A BOARD CN 102 TO SS-38F BOARD CNIO6 TO VI-9AG BOARD CNO09

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# TUNER TUNER







- All capacitors are in μF unless otherwise noted, pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/6W unless otherwise noted.  $k\Omega:1000\Omega,\,M\Omega:1000k\Omega.$
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
  - : nonflammable resistor.
- w : fusible resistor.
- panel disignation.
- adjustment for repair.
- : B + bus.
- --- : B bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10M $\Omega$ )

Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

#### Signal path

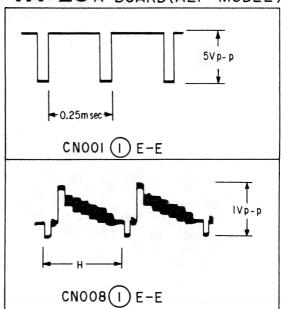
REC Y & CHROMA SIGNAL

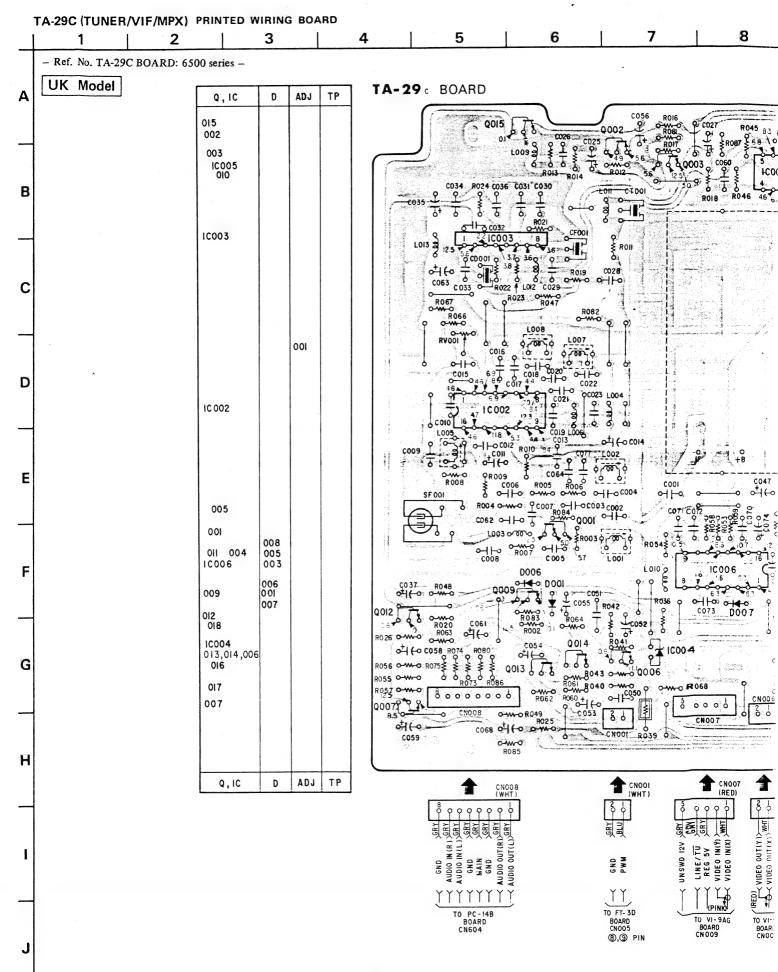
:> :PB Y & CHROMA SIGNAL

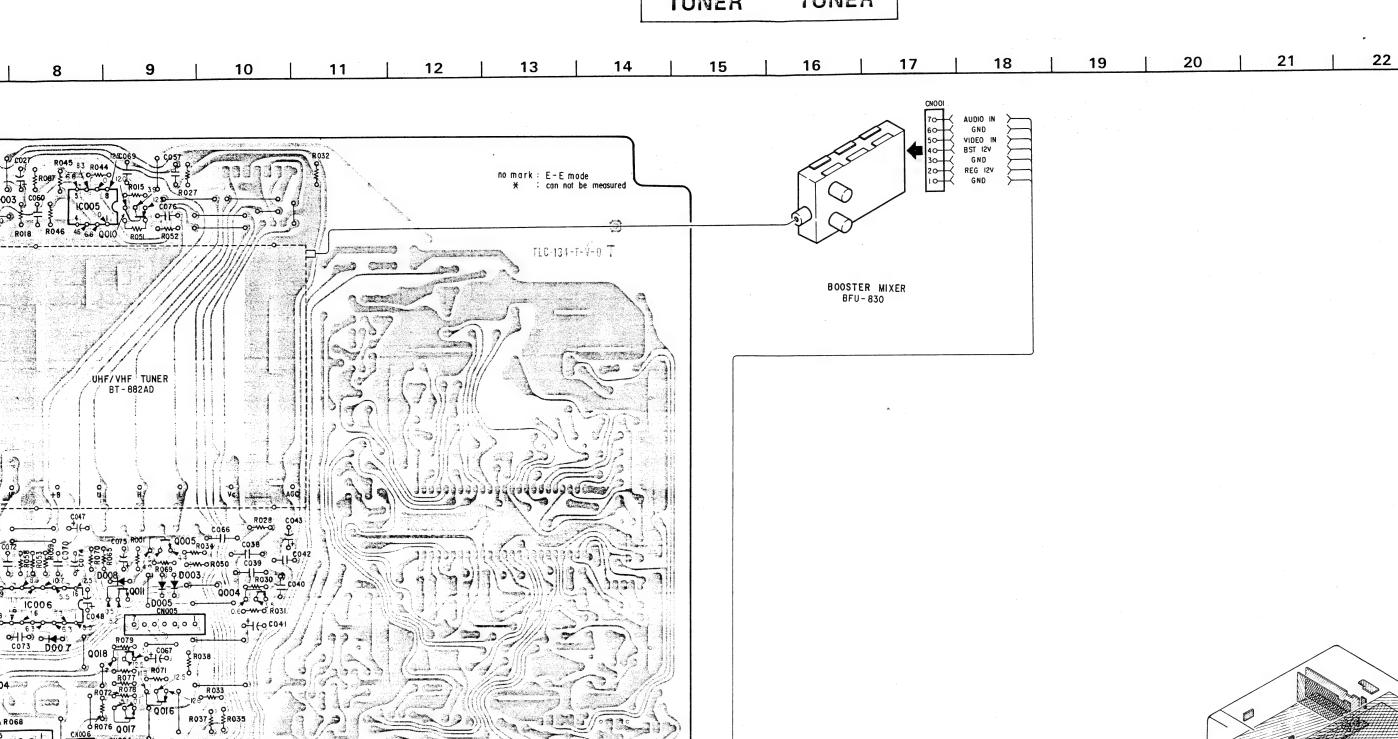
F.EC AUDIO SIGNAL

= :PB AUDIO SIGNAL

### TA-28 A BOARD (AEP MODEL)

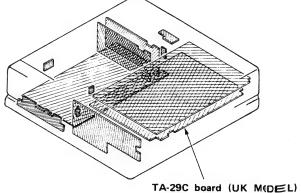






1-615-835-

[11]



23

component side.

- : parts extracted from the conductor side.

: conductor side pattern.

: B + pattern.

• 3 - pattern.

• Digital transistor (TA-29C : Q015, Q17) transistor with re-

Refer to the TA-29C board schematic diagram for digital ram-

CN005

799999 ब्रिड्म ब्रिड्म ड्राइन्ड

€ CN002

399999999

TO SS-38G BOARD CN106

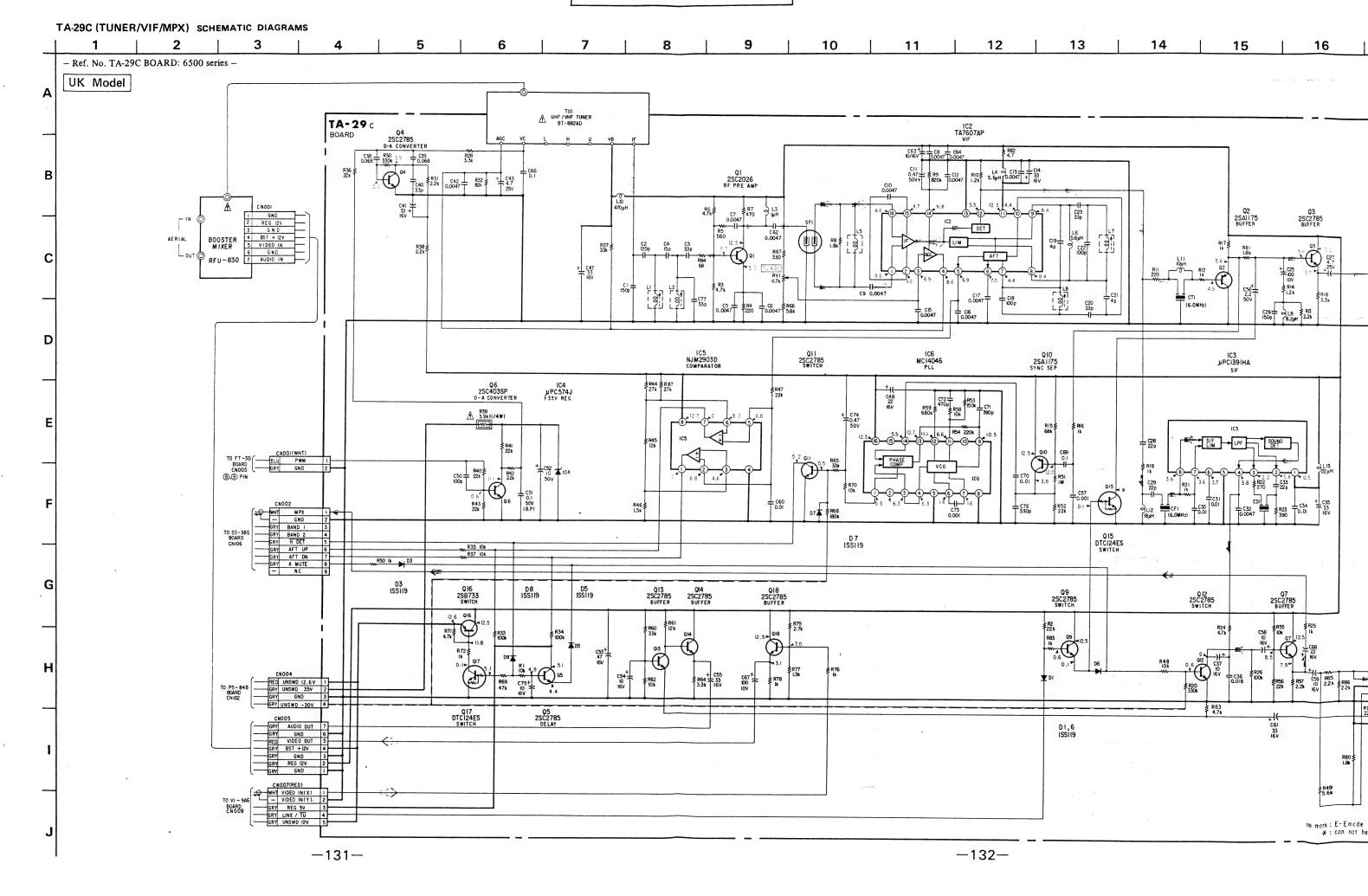
-30V 35V 12.6V

GND GND UNSWD

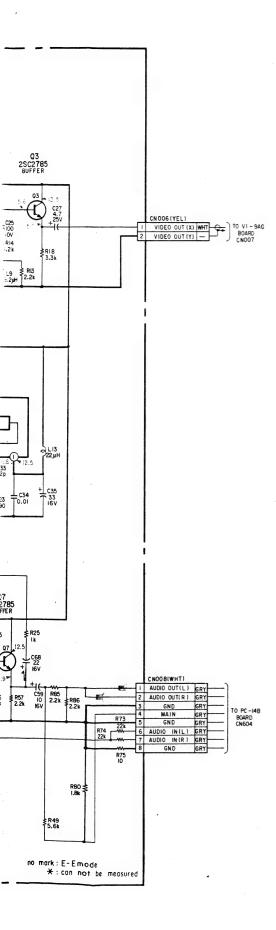
TO PS-84B TO VI-9AG BOARD BOARD CNIO2

CNOOT (RED)

TO VI-9AG BOARD CN 009



16 | 17 | 18 | 19



- All capacitors are in µF unless otherwise noted. pF: µµF
   50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W unless otherwise noted.
   kΩ: 1000Ω, MΩ: 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- : nonflammable resistor.
- fusible resistor.
- i panel disignation.
- : adjustment for repair.
- : B + bus.
- --- : B bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10M $\Omega$ )

Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

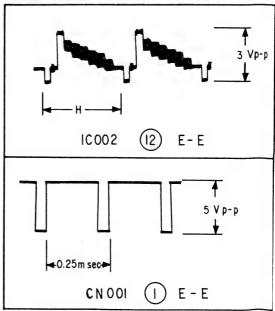
#### Signal path

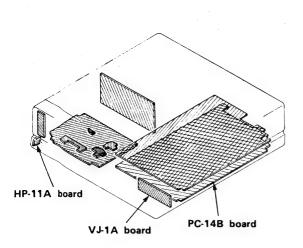
:REC Y & CHROMA SIGNAL

> :PB Y & CHROMA SIGNAL

F :REC AUDIO SIGNAL

# TA-29 c BOARD (UK MODEL)





O— : parts extracted from the component side.

• parts extracted from the conductor side.

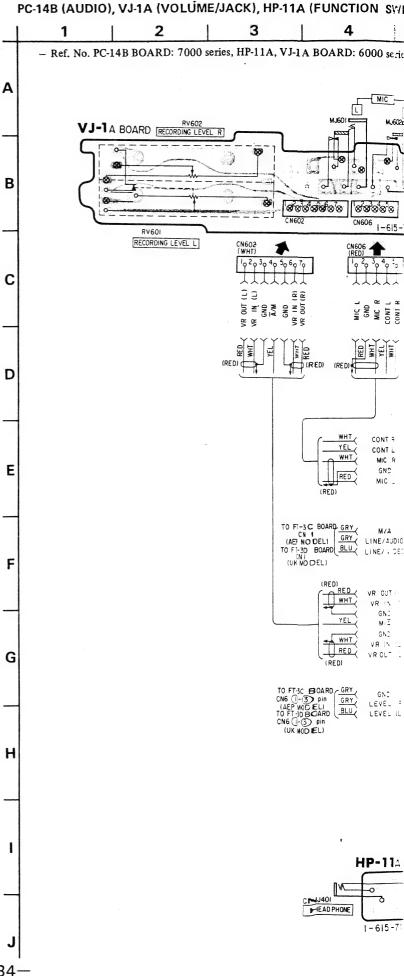
• : conductor side pattern.

component side pattern.

• : B + pattern.

• 8 - cattern

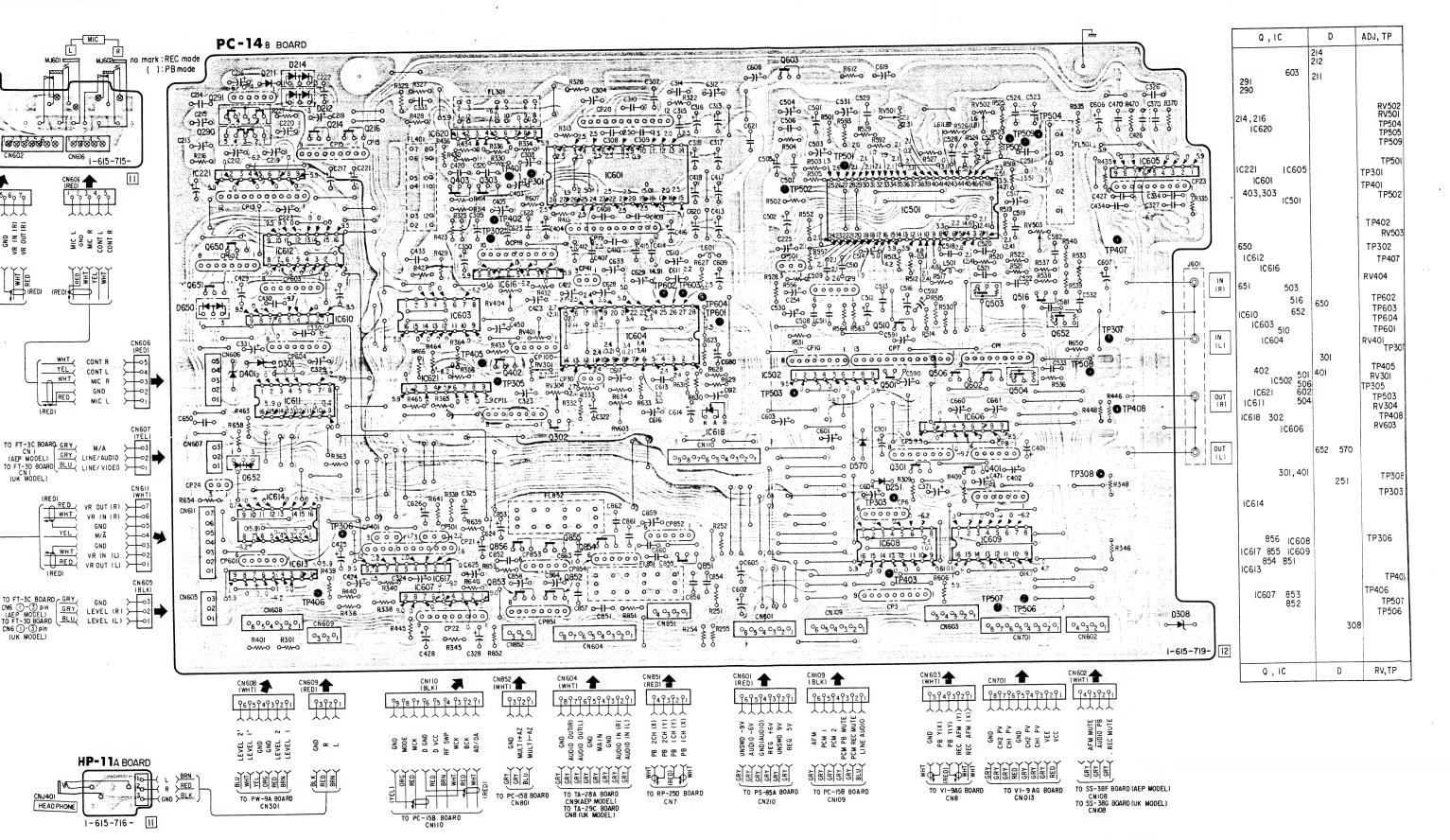
Digital transistor (HP-11A: Q202, 203, 204, 205, PC-14B: Q503, 504, 652) transistor with resistors.
 Refer to the HP-11A, PC-14B boards schematic diagram for digital transistor.

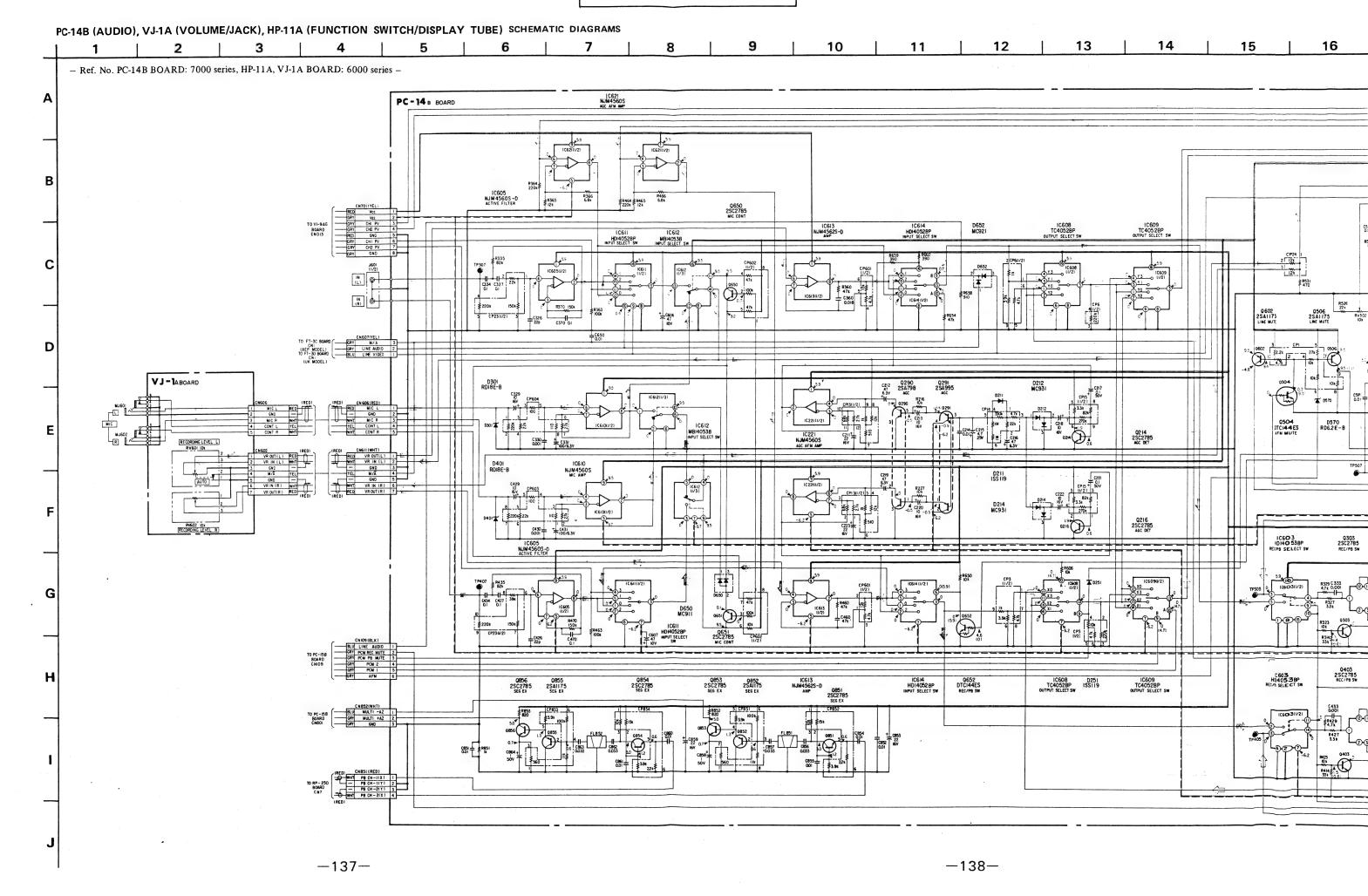


#### **AUDIO AUDIO**

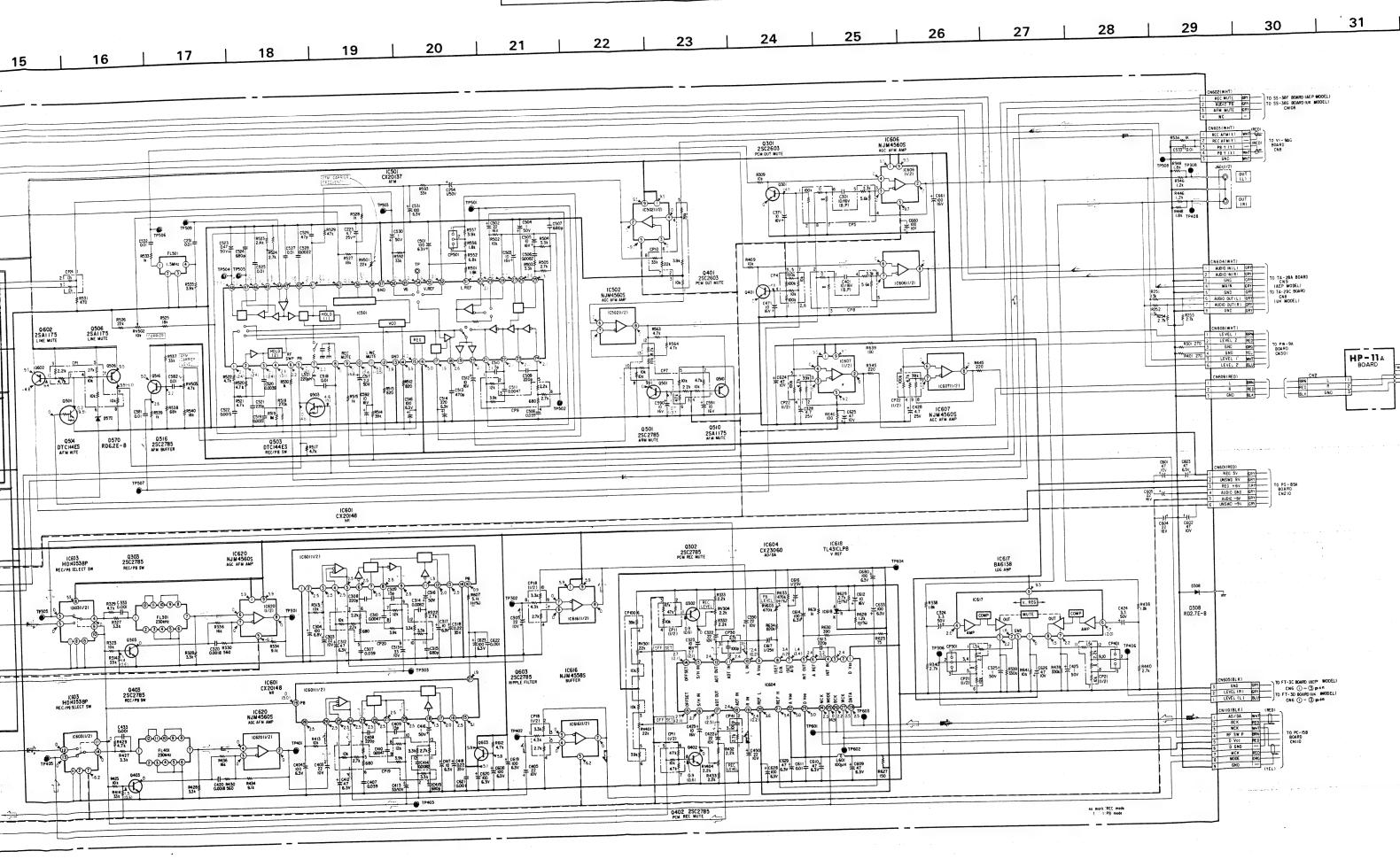
11A (FUNCTION SWITCH/DISPLAY TUBE) PRINTED WIRING BOARDS

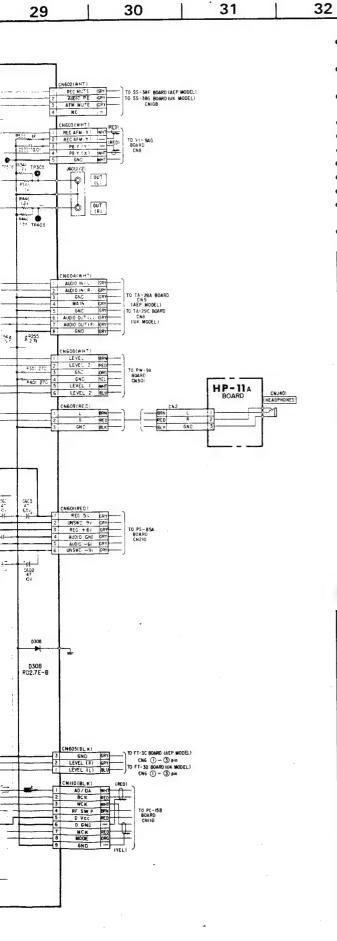
J-1A BOARD: 6000 series -





AUDIO AUDIO





• All capacitors are in  $\mu F$  unless otherwise noted, pF :  $\mu \mu F$  50WV or less are not indicated except for electrolytics and tantalums.

All resistors are in ohms, 1/6W unless otherwise noted.

 $k\Omega$ : 1000 $\Omega$ ,  $M\Omega$ : 1000 $k\Omega$ .

All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.

: nonflammable resistor. : fusible resistor.

: panel disignation.

: adjustment for repair.

: B + bus.

--- : B - bus.

The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.

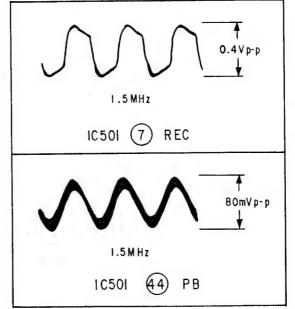
All voltage are dc measured with a VOM (10M $\Omega$ )

When indicating parts by reference number, please include the board name.

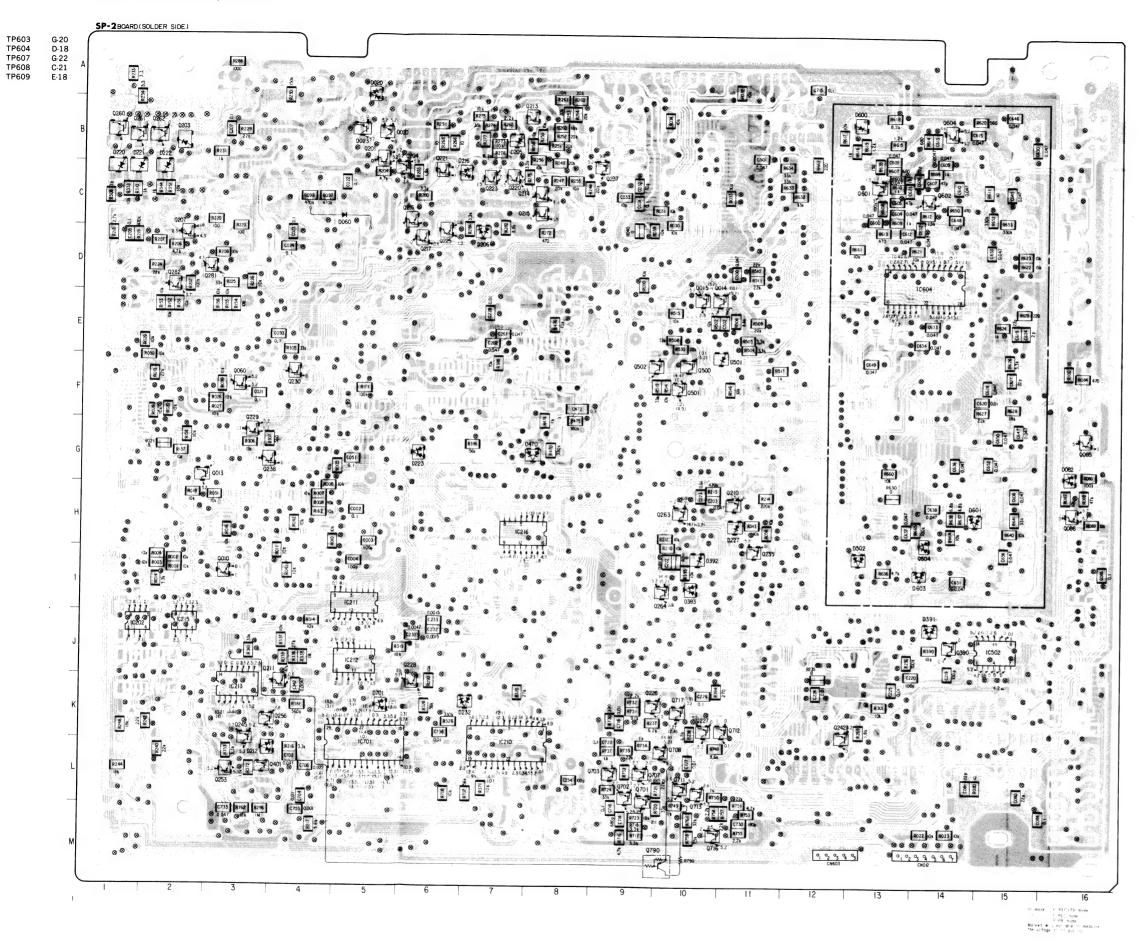
#### Signal path

:REC AUDIO SIGNAL :PE AUDIO SIGNAL

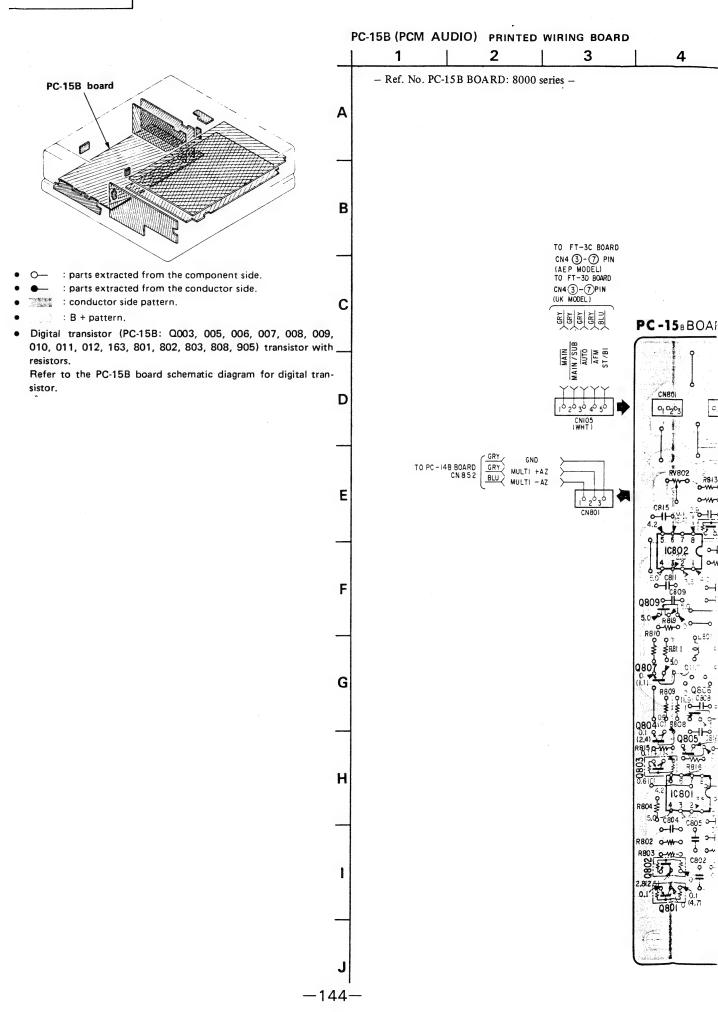
# PC-14B BOARD

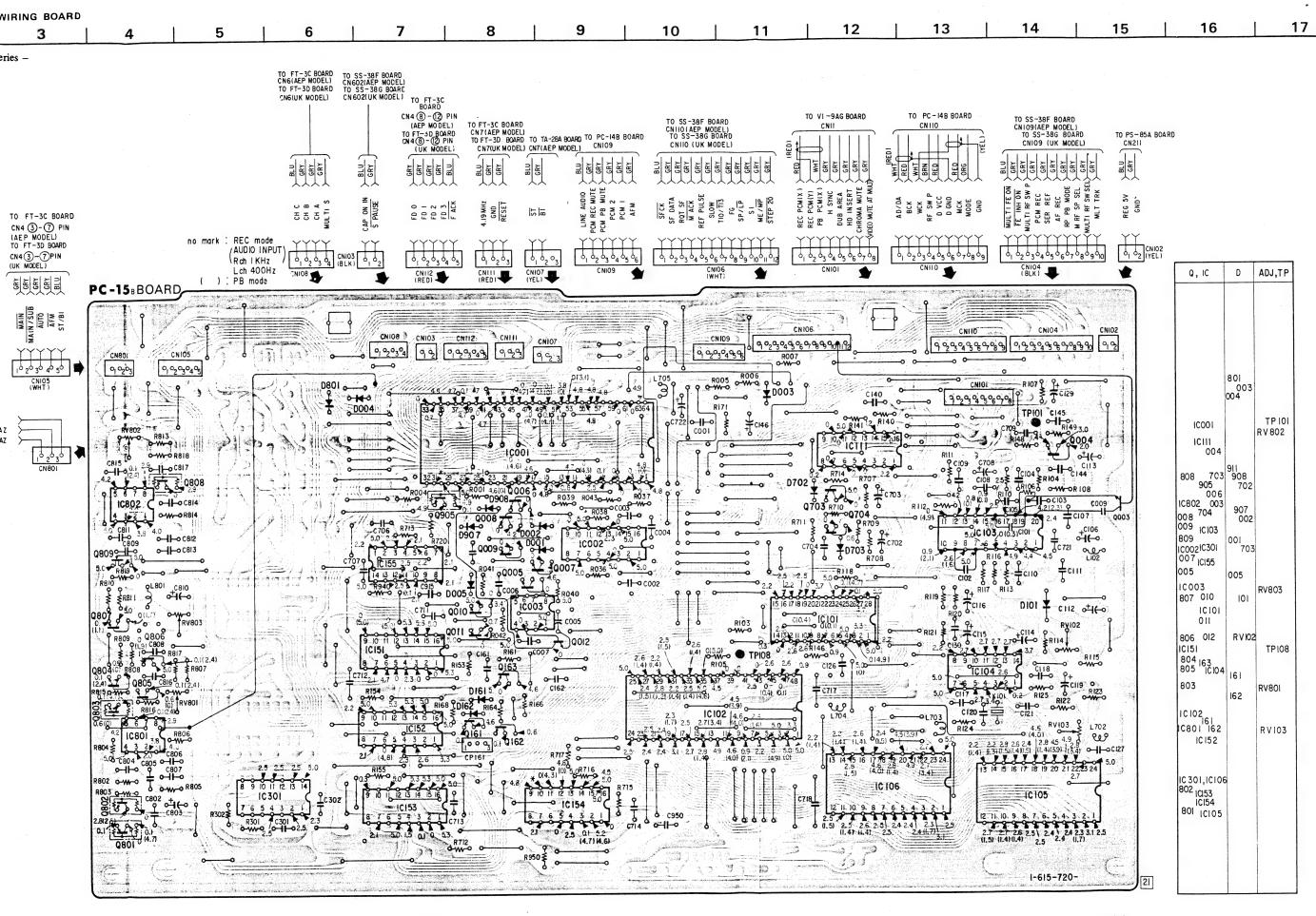


-Ref. No. SP-2 BOARD: 4,000 series-

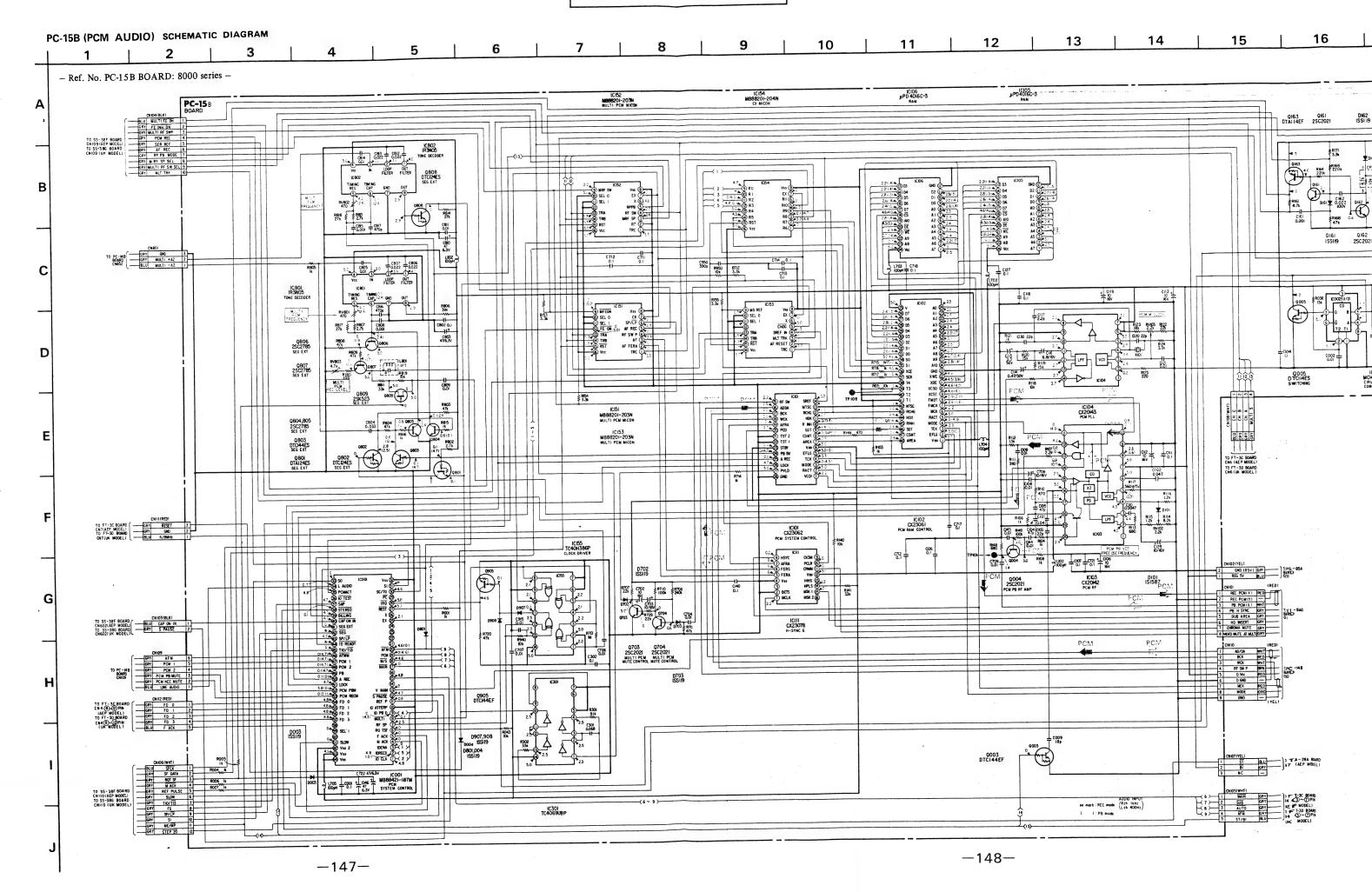


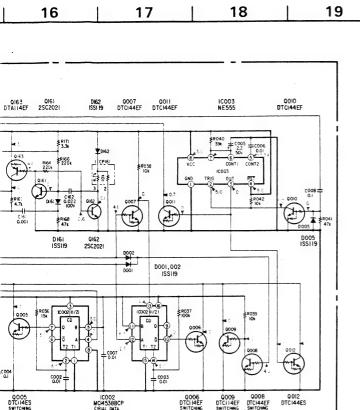
### AUDIO





18





- All capacitors are in μF unless otherwise noted, pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/6W unless otherwise noted.

 $k\Omega:1000\Omega, M\Omega:1000k\Omega.$ 

 All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.

: nonflammable resistor.

• fusible resistor.

• panel disignation.

e \_\_\_\_\_ : adjustment for repair.

• - : B + bus.

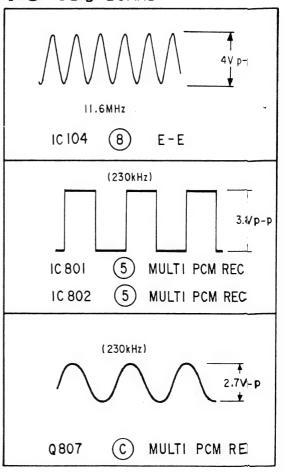
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10M $\Omega$ )

When indicating parts by reference number, please include the board name.

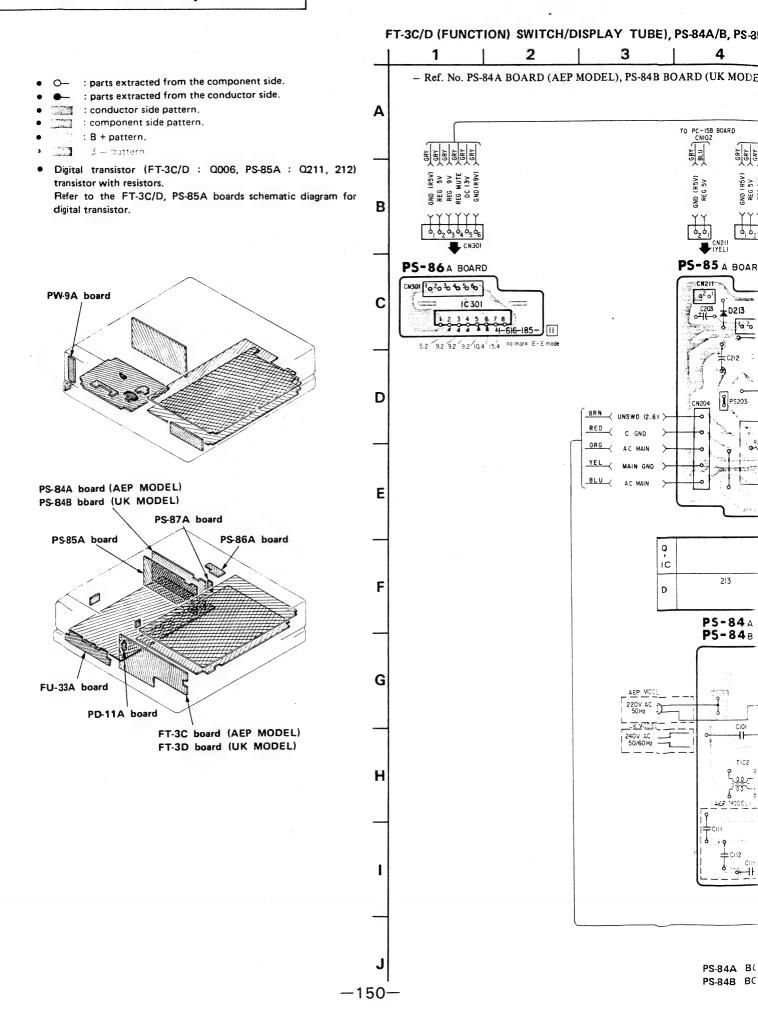
#### Signal path

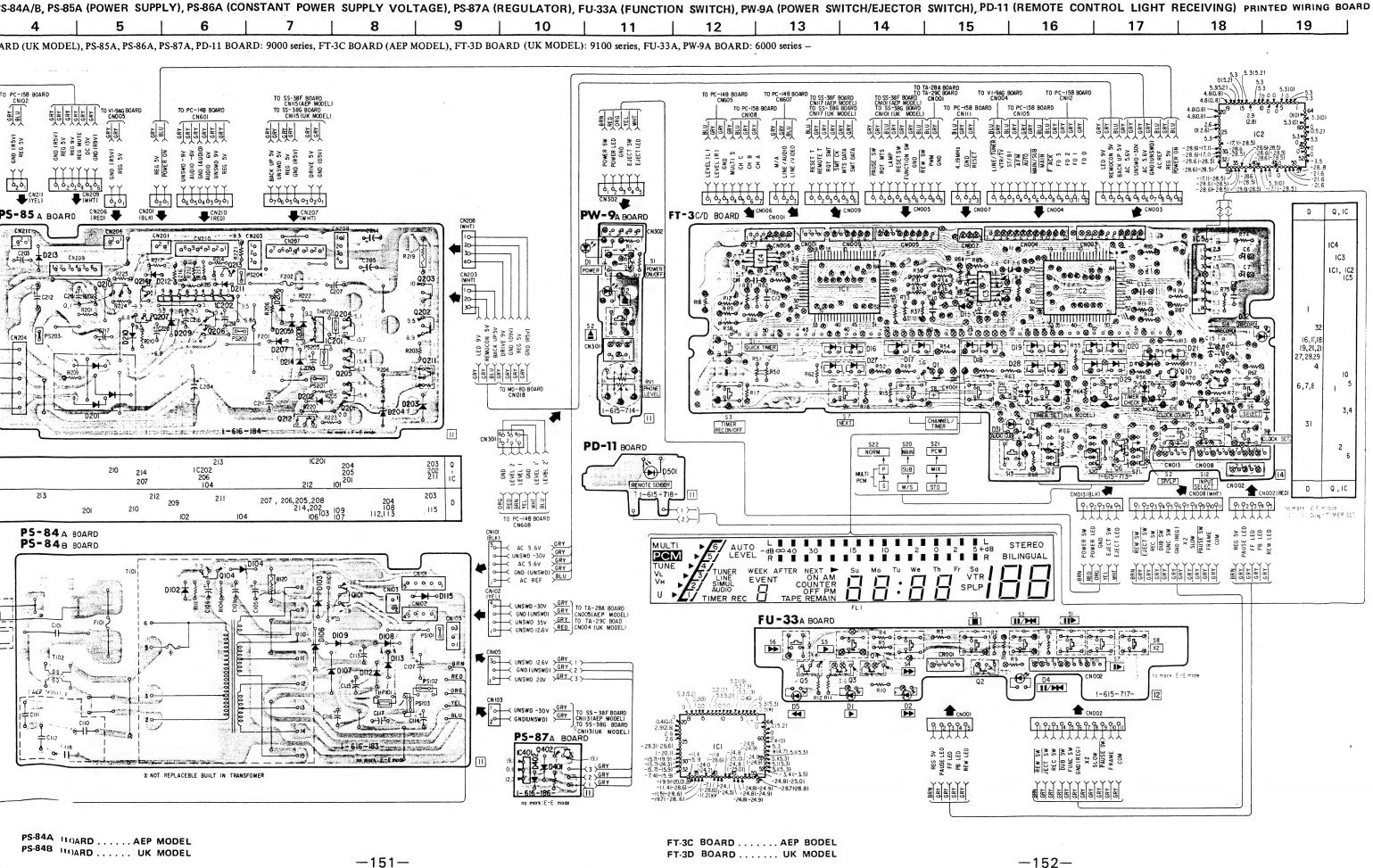
# IPEC AUDIO SIGNAL
15 AUDIO SIGNAL

## PC-15B BOARD

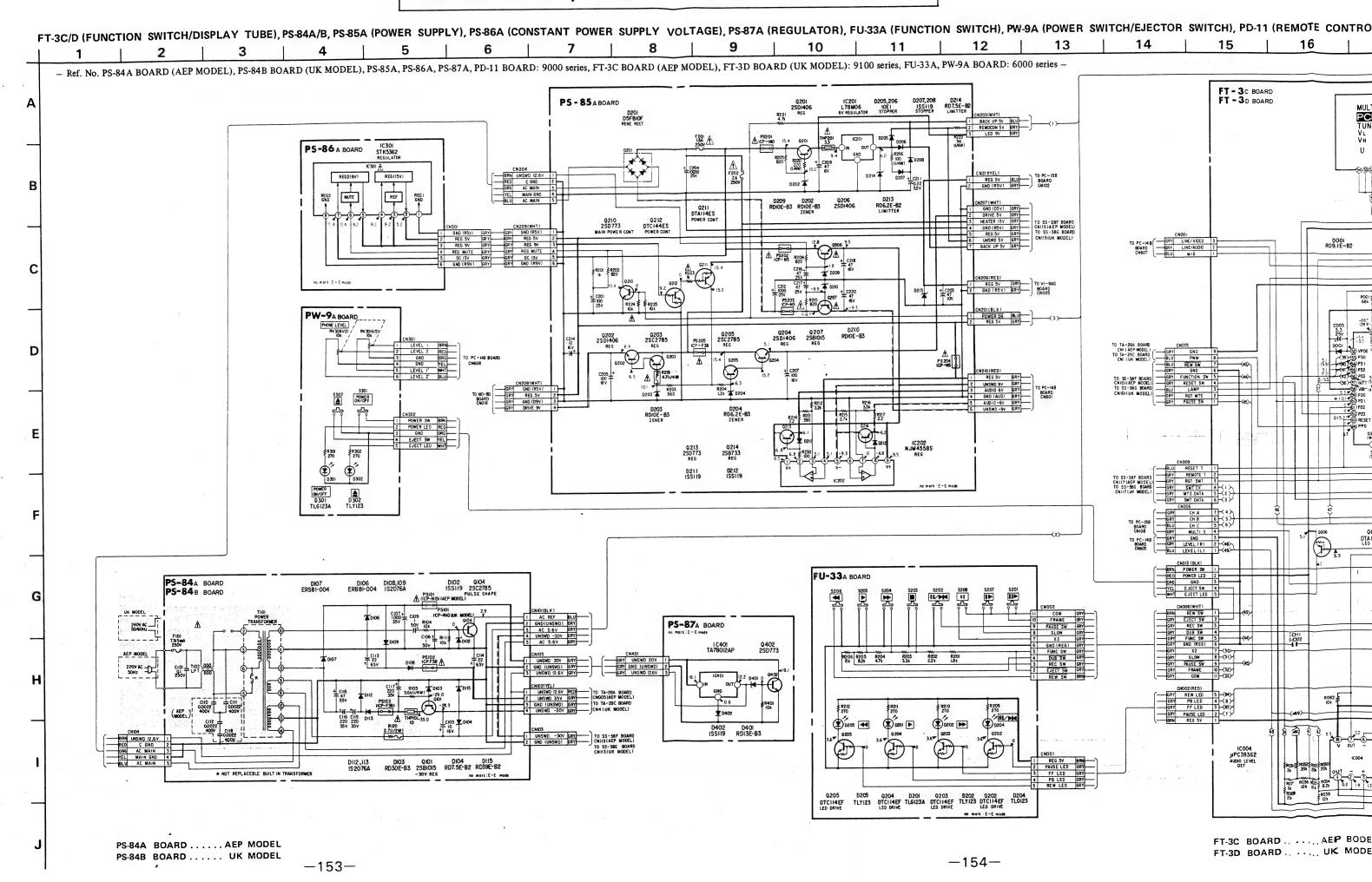


### POWER SUPPLY, TIMER



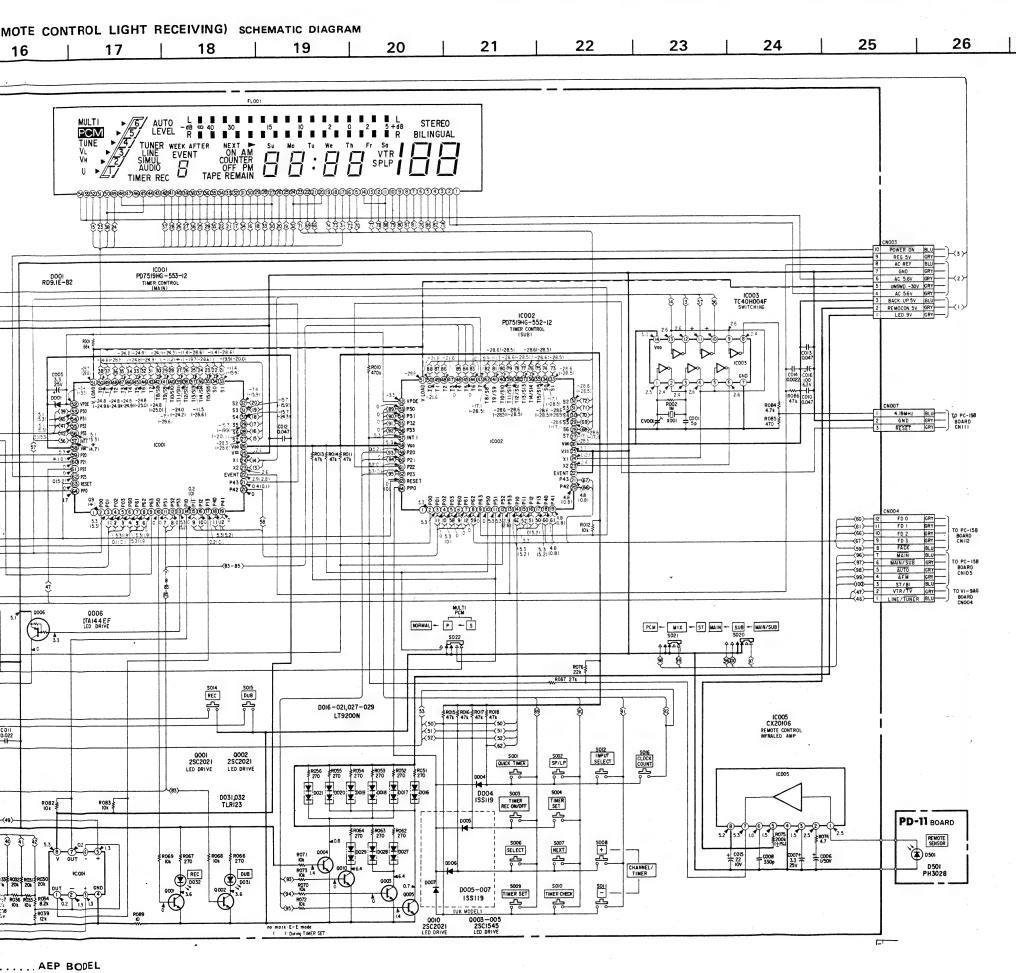


# POWER SUPPLY, TIMER POWER SUPPLY, TIMER



### POWER SUPPLY, TIMER

### POWER SUPPLY, TIMER



- All capacitors are in μF unless otherwise noted, pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/6W unless otherwise noted  $k\Omega:1000\Omega$ ,  $M\Omega:1000k\Omega$ .
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- . nonnammable re
- tusible resistor.
- : panel disignation.
- : adjustment for repair.
- . B + bus.
- --- : B bus

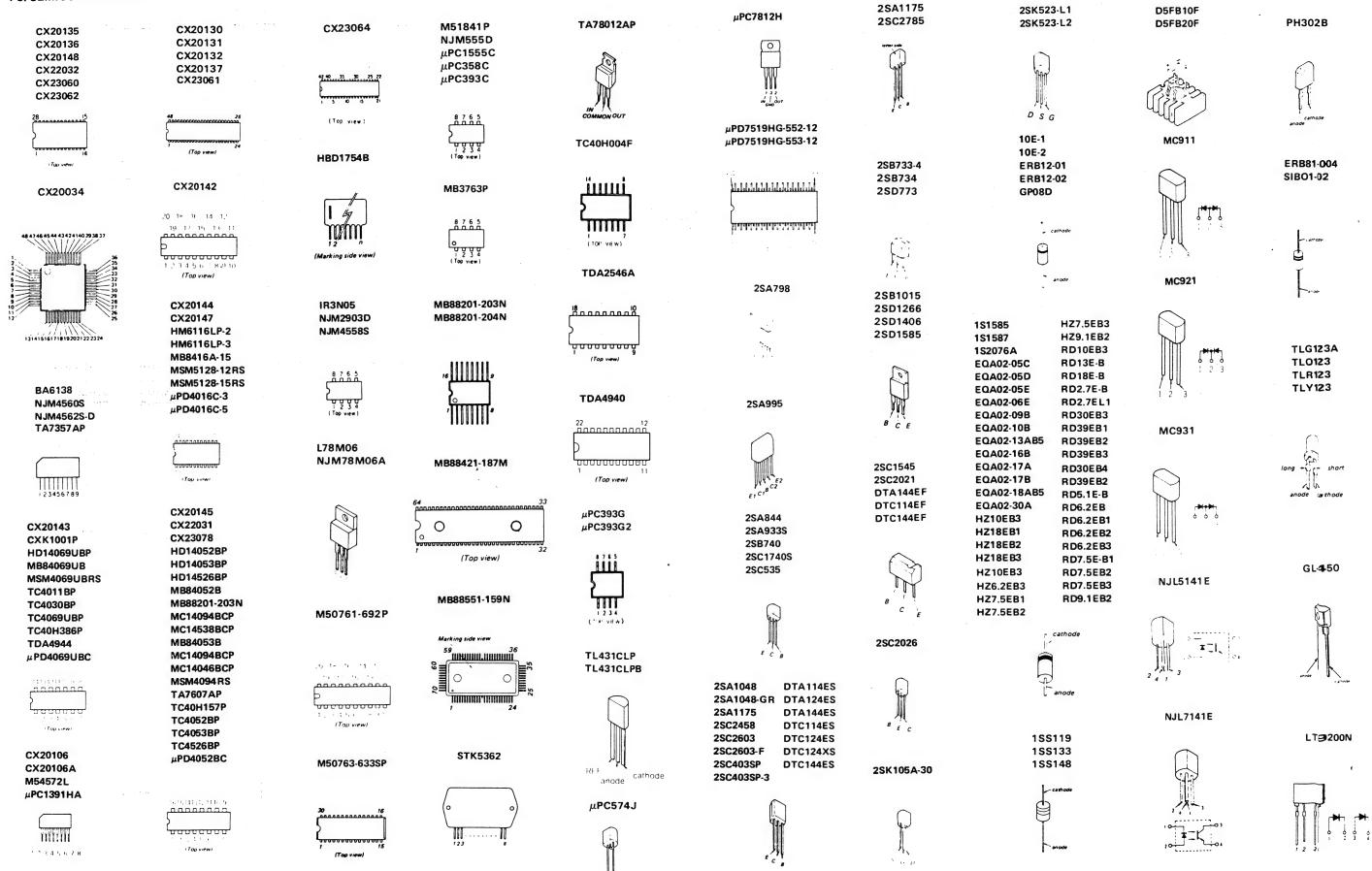
27

- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- ullet All voltage are dc measured with a VOM (10M $\Omega$ )

Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

### 4-3. SEMICONDUCTORS



# SECTION 5 EXPLODED VIEWS

#### NOTE:

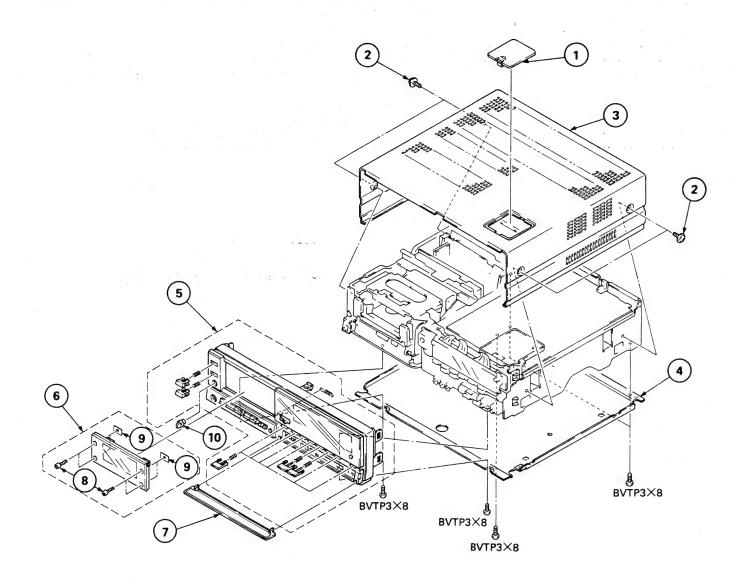
2B

-9200N

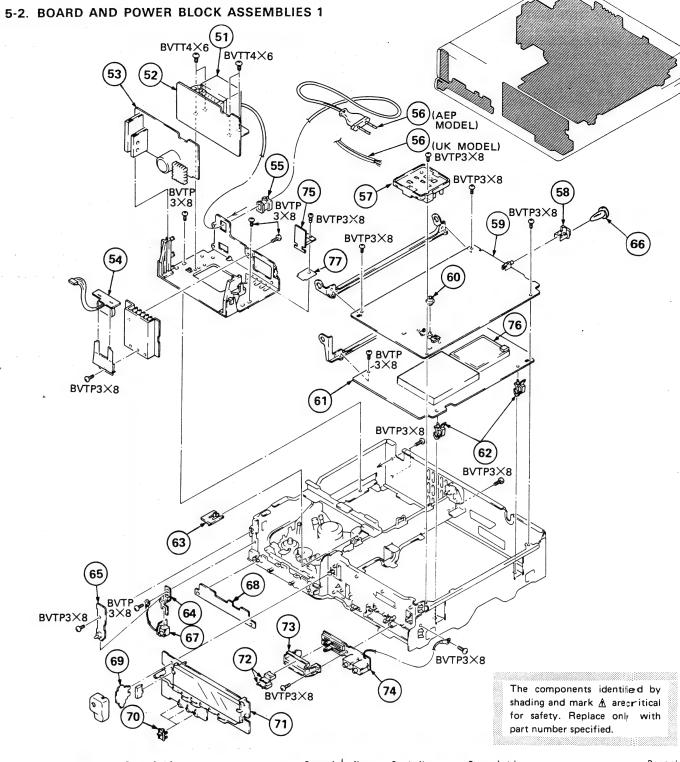
- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

### 5-1. FRONT PANEL AND CASE (UPPER, LOWER) ASSEMBLIES

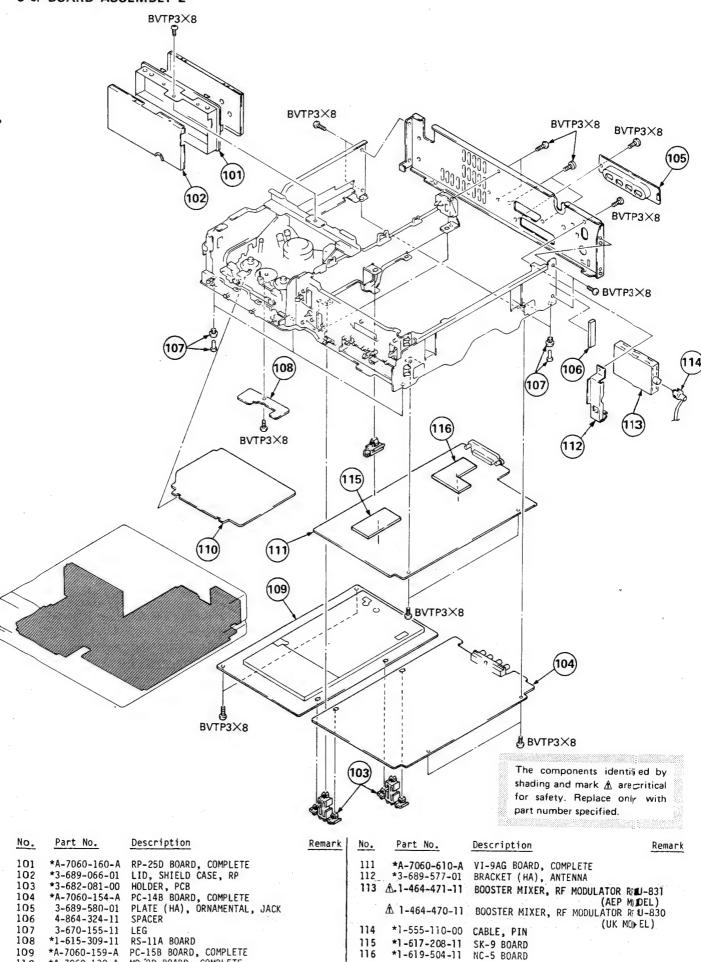


No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
2 3 4	2-021-201-03	SCREW, M3 CASE CASE ASSY (SEAL), UPPER	en de la companya de	,		nor, rente	8,9



No.	Part No.	<u>Description</u> <u>Remark</u>	No.	Part No.	Description	Remark
51	<b>A.1-448-236-11</b>	TRANSFORMER, POWER T101	63	*3-691-916-01	COVER, CAP	
52	*A-7070-117-A	PS-84A BOARD, COMPLETE (AEP MODEL)	64	*3-696-807-01	HOLDER, HP JACK	
	*A-7070-121-A	PS-84B BOARD, COMPLETE (UK MODEL)	65	*1-615-714-11	PW-9A BOARD	
53		PS-85A BOARD, COMPLETE	66	2-249-250-00	CLIP (SMALL), CANOE	
54			67	*A-7060-148-A	HP-11A BOARD, COMPLETE	
55	A3-703-244-00		68	*1-615-717-11	FU-33A BOARD	
56		CORD, POWER (AEP MODEL)	69	*1-615-718-11	PD-11A BOARD	
•		CORD, POWER (UK MODEL)	70	3-689-518-01	KEY, SLIDE	,
57		KEYBOARD ASSY, PRESET (AEP MODEL)	71	*A-7060-158-A	FT-3C BOARD, COMPLETE (AEP MOIE 1	.)
•		KEYBOARD ASSY, PRESET (UK MODEL)		*A-7060-162-A	FT-3D BOARD, COMPLETE (UK MODEL)	·
58		PLATE, ORNAMENTAL, REMOTE	72	3-689-519-01	KEY, VOL	
59	*A-7060-156-B		73	*3-689-536-01	GUIDE, SLIDE	
• •	*A-7060-163-B		74	*1-615-715-11	VJ-1A BOARD	
60	3-691-971-01		75	*1-616-186-11	PS-87A BOARD	
61		TA-28A BOARD, COMPLETE (AEP MODEL)	76	A.1-463-577-31	TUNER, ET (BT-883AD)(AEP MODEL)	
		TA-29C BOARD, COMPLETE (UK MODEL)			TUNER, ET (BT-882AD) (UK MODEL)	
62		HOLDER (A), PC BOARD	1 77	2-371-561-00	BUSHING (P), INSULATING	
		—1	60-	•		

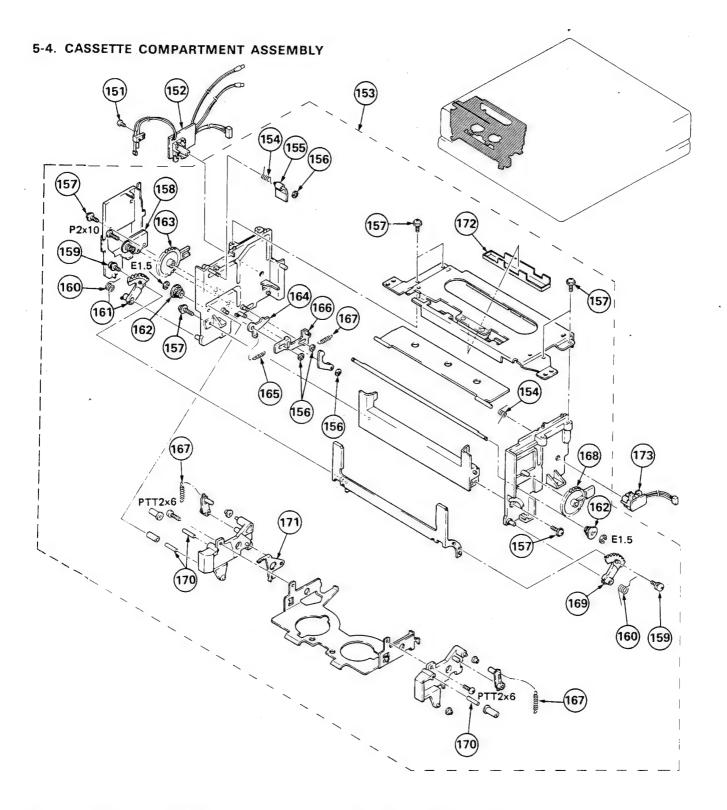
#### 5-3. BOARD ASSEMBLY 2



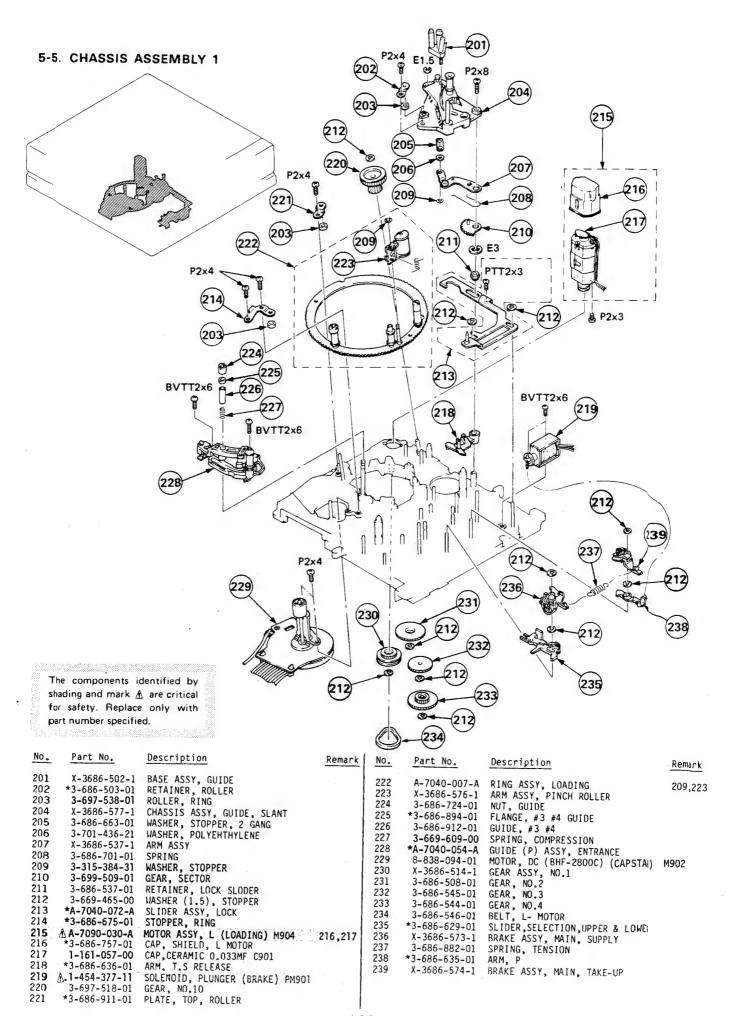
116

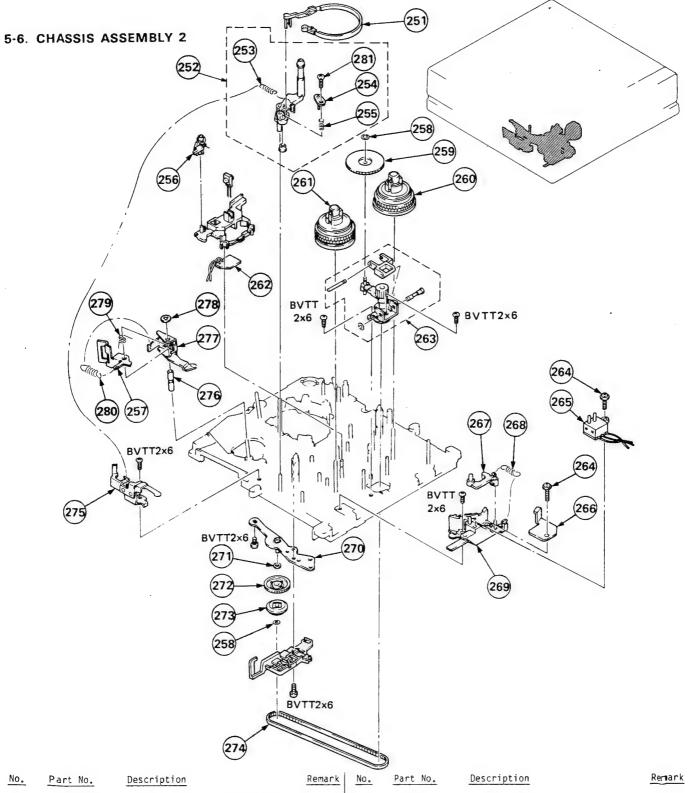
\*A-7060-159-A PC-15B BOARD, COMPLETE \*A-7060-132-A MD-8D BOARD, COMPLETE

109



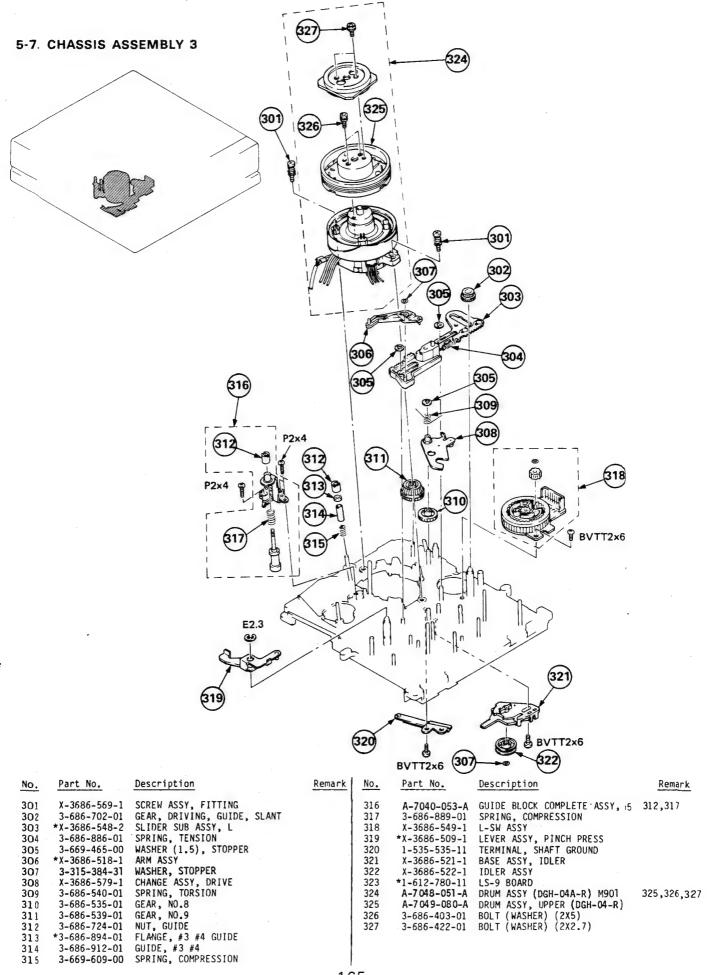
151 3-669-479-11 SCREW (1.4X3.5), TAPPING 163 3-689-005-01 GEAR (LEFT), DRIVING 152 *1-615-317-11 TE-2A BOARD 164 3-689-049-01 STOPPER, C.L. 153 A-7090-025-A CASSETTE COMPARTMENT BLOCKASSY 154-172 165 3-689-014-01 SPRING TENSION	mark	
A-7090-025-A CASSETTE COMPARTMENT BLOCKASSY 154-172 165 3-689-014-01 SPRING, TENSION 3-689-017-01 LEVER, PUSH 167 4-602-490-11 SPRING, TENSION SIDER, C.L. 1689-048-01 SIDER, C.L. 1693-689-048-01 SIDER, C.L. 1693-689-048-01 SPRING, TENSION 1693-689-052-01 GEAR (RIGHT), DRIVING 1693-689-052-01 GEAR (RIGHT), DOOR 170 3-689-052-01 GEAR (RIGHT), DOOR 170 3-703-357-06 FIN, PARALLEL (DIA. 1.6X14) 171 3-689-056-03 PLATE, RELEASE, LOCK, LID 172 *3-689-016-03 COVER, LAMP 173 *1-615-316-11 TE-1A BOARD 173 *1-615-316-11 TE-1A BOARD	r	r

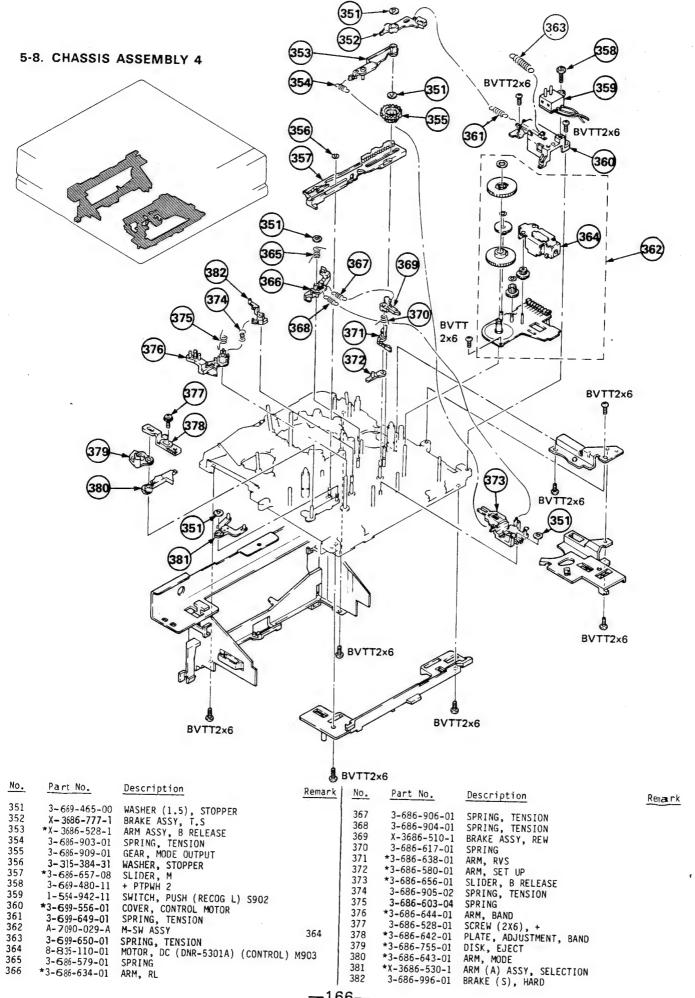




No.	Part No.	Description	Remark	No.	Part No.	Description
251	X-3686-531-1	BAND ASSY, TENSION REGULATOR		266	*3-686-991-01	STOPPER, REEL TABLE
252	A-7040-059-A	ARM ASSY, TENSION REGULATOR 253-	255,281	267	*3-686-637-01	BRAKE (S), SOFT
253	3-699-519-01	SPRING, TENSION		268	3-696-082-01	SPRING, TENSION
254	*X-3686-523-1	PLATE ASSY, TENSION REGULATOR		269	*3-686-760-01	GUIDE, BAND
255	3-699-609-01	SPRING, COMPRESSION		270	*X-3686-529-1	BASE ASSY, CHANGE GEAR
256	X-3686-590-1	BRAKE ASSY, REV		271	3-701-436-11	WASHER, 1.6
257	*3-686-641-01	ARM, PINCH PRESS		272	X-3686-520-1	GEAR ASSY, CHANGE
258	3-315-384-31	WASHER, STOPPER		273	*3-686-596-01	FLANGE, GEAR
259	X-3686-763-1	GEAR (B) ASSY, DRIVING		274	3-686-646-01	BELT, TIMIMG
260	X-3686-572-2	TABLE ASST, REEL, TAKE-UP		275	*X-3686-525-1	HOOK ASSY, SPRING
261	X-3686-571-2	TABLE ASST, REEL, SUPPLY		276	*3-686-567-01	SLEEVE, PINCH PRESS
262	*1-613-367-11	LD-1 BOARD		277	*3-686-660-01	ARM, PINCH LIMITER
263	X-3686-750-1	DRIVING COMPLETE ASSY		278	3-669-465-00	WASHER (1.5), STOPPER
264	3-669-480-11			279	3-686-568-01	SPRING, TORSION
265	1-554-942-11	SWITCH, PUSH (RECOG R) S901	]	280	3-686-885-01	SPRING, TENSION
			•	281	3-697-546-01	SCREW (+-M2x6), SPECIAL
			1.0	1		

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### 5-9. HARDWARE LIST

#### SCREW

```
7-621-255-20 SCREW +P 2X4
7-621-255-50 SCREW +P 2X8
7-627-553-48 SCREW, PRECISION +P 2X4
7-685-106-19 SCREW +P 2X10 TYPE2 NON-SLIT
7-685-645-71 SCREW +BVTP 3X6 TYPE2 IT-3
7-685-646-71 SCREW +BVTP 3X8 TYPE2 IT-3
7-685-780-04 SCREW +PTT 2X3 (S)
7-685-783-09 SCREW +PTT 2X6 (S)
7-685-853-01 SCREW +BVTT 2X6 (S)
7-685-880-01 SCREW +BVTT 4X6 (S)
```

#### RING

7-624-102-04 STOP RING 1.5, TYPE -E 7-624-105-04 STOP RING 2.3, TYPE -E 7-624-106-04 STOP RING 3.0, TYPE -E

### MD-8D

# SECTION 6 ELECTRICAL PARTS LIST

#### NOTE:

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

#### RESISTORS

- All resistors are in ohms
- F : nonflammable

 Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

#### **CAPACITORS**

MF : μF, PF : μμF

#### COILS

• MMH : mH, UH : μH

Ref.No Part No.	Description			Remark	Ref.No	Part No.	Description				Remark
*A-7060-132-A	MD-8D BOARD				TRANSISTOR						
CA	PACITOR				Q001 0002	8-729-902-11 8-729-201-78	TRANSISTOR TRANSISTOR				
			2011		Q003	8-729-902-11	TRANSISTOR	2SC2021			
C001 1-161-974-00 C002 1-161-974-00		0.1MF 0.1MF	20% 20%	16V 16V	Q004 Q006	8-729-201-78 8-729-900-65	TRANSISTOR TRANSISTOR				
C003 1-161-974-00		0.1MF	20%	16V	9000	0.723-300-03	/KAN31370K	DINITALS	,		
C004 1-123-380-00		1MF	20%	50V	0100	8-729-900-33	TRANSISTOR		•		
C005 1-123-382-00	ELECT	3.3MF	20%	50 <b>V</b>	Q101 Q103	8-729-374-02 8-729-117-54	TRANSISTOR TRANSISTOR				
C007 1-123-380-00	ELECT	1MF	20%	50V	Q104	8-729-117-54	TRANSISTOR				
C008 1-123-380-00 C009 1-123-379-00		1MF	20%	507	Q105	8-729-900-33	TRANSISTOR	DTC144EF			
C009 1-123-379-00 C010 1-123-318-00		0.47MF 33MF	20% 20%	50V 10V	0106	8-729-900-33	TRANSISTOR	DTC144FF			
CO11 1-123-318-00		33MF	20%	10V	0107	8-729-900-33	TRANSISTOR	DTC144EF			
C012 1-123-318-00	CLCCT	22MC	20%	101/	Q108	8-729-117-54	TRANSISTOR	2SA1175			
C012 1-123-318-00 C013 1-123-356-00		33MF 10MF	20%	10V 25V		RES	ISTOR				
C014 1-123-356-00	ELECT	10MF	20%	25V							
C015 1-123-356-00 C016 1-123-356-00		10MF 10MF	20% 20%	25V 25V	R001 R002	1-247-845-00	CARBON CARBON	3.9K		1/6W	
0010 1-123-330-00	CLCCI	10141	20%	234	R004	1-249-421-11 1-247-895-00	CARBON	2.2K 470K	5% 5%	1/6W 1/6W	
C017 1-123-608-00		0.22MF	20%	50V	R006	1-247-831-00	CARBON	1K	5%	1/6W	
C018 1-123-356-00 C019 1-124-271-00	ELECT	10MF 1MF	20% 20%	25 V 50 V	R007	1-249-447-11	CARBON	1	5%	1/4W	
C101 1-123-306-00		47MF	20%	107	R008	1-247-851-00	CARBON	6.8K	5%	1/6W	
C102 1-162-306-31	CERAMIC	0.01MF	20%	16V	R010	1-247-883-00	CARBON	150K	5%	1/6W	
COL	NAECTOD				R011	1-247-847-00	CARBON	4.7K	5%	1/6W	
<u> </u>	NNECTOR				R013 R015	1-247-863-00 1-249-429-11	CARBON CARBON	22K 10K	5% 5%	1/6W 1/6W	
CN001 *1-564-003-00											
CN002 *1-564-003-00 CN003 *1-564-003-00	PIN, CONNECT PIN, CONNECT				R016 R017	1-247-831-00 1-249-429-11	CARBON	1K 10K	5% 5%	1/6W 1/6W	
CNOOS *1-564-010-11	PIN, CONNECT				R018	1-247-771-00	CARBON	3.3	5%	1/6W	
CNO09 *1-564-001-11	PIN, CONNECT	TOR 2P			R019	1-247-771-00	CARBON	3.3	5%	1/6W	
CN013 *1-564-002-00	PIN, CONNECT	TOR 3P			R020	1-247-771-00	CARBON	3.3	5%	1/6W	
CN014 *1-564-002-00	PIN, CONNECT				R022	1-247-869-00	CARBON	39K	5%	1/6W	
CN015 *1 -564-001-11	PIN, CONNECT				R023	1-249-447-11	CARBON	1	5%	1/4W	
CN019 *1-564-001-11 CN020 *1-564-004-00					R024 R025	1-247-863-00 1-247-863-00	CARBON	22K 22K	5% 5%	1/6W 1/6W	
2 00 7 00 7 00	•				R028	1-247-815-00	CARBON	220	5%	1/6W	
CN025 *1 -564-001-11 CN050 *1 -564-005-00					0020	1 240 400 11	CARRON	104	Εα	1.4614	
CN030 "1 =304=003=00	PIN, CONNECT	UK BP			R030 R100	1-249-429-11	CARBON CARBON	10K 10K	5% 5%	1/6W 1/6W	
DIO	DE				R101	1-249-429-11	CARBON	10K	5%	1/6W	
D001 8-719-200-02	DIODE 10E 2				R102	1-249-429-11	CARBON	10K	5%	1/6W	
04/19-200-02	DIODE TOE-2				R103	1-247-862-00	CARBON	20K	5%	1/6W	
10					R104	1-247-833-00	CARBON	1.2K	5%	1/6W	
IC001 8-752-013-60	IC CX20136				R105 R106	1-249-429-11 1-249-429-11	CARBON CARBON	10K 10K	5% 5%	1/6W 1/6W	
IC002 8-759-202-69					R107	1-249-447-11	CARBON	1	5%	1/4W	ť
IC003 8-759-102-97	IC CX20145				R108	1-247-862-00	CARBON	20K	5%	1/6W	
IC004 8-759-135-80 IC101 8-759-240-69	IC UPC358C IC TC4069UBP				R109	1-247-862-00	CARBON	20K	5%	1/6W	
	10 1040030DF				R110	1-247-862-00	CARBON	20K	5%	1/6W	
IC	LINK				R111	1-249-437-11	CARBON	47K	5%	1/6W	
PS001A.1-532-675-11	LINK TO (TO	P_F381			R112 R113	1-247-863-00 1-249-429-11	CARBON CARBON	22K 10K	5% 5%	1/6W 1/6W	
PS002/1-532-675-11	LINK, IC (IC	P-F38)						101			
PS003A.1-532-675-11	LINK, IC (IC	P-F38)		1	R114	1-249-429-11	CARBON	10K	5%	1/6W	

## MD-8D PC-14B

										<u> </u>				_
	Ref.N	lo Part No.	Description	<u>n</u>			Remark	Ref.No	o Part No.	Description			Remar	k
	R115 R116	1-249-429-11 1-247-862-00	CARBON CARBON	10K 20K		/6W		C314 C315	1-130-482-00 1-102-116-00		0.0082MF 680PF	5% 10%	50V	
	R117	1-249-429-11	CARBON	10K		/6W		C316	1-123-380-00		1MF	20%	507	
	R118	1-249-429-11	CARBON	10K		/6W		C317	1-131-383-00	TANTALUM	10MF	10%	50V	
	R119	1-249-437-11	CARBON	47K		/6W		C318	1-131-343-00	TANTALUM	0.22MF	10%	6.3V 35V	
•								0010	1 101 010 00	manneon	0.22/11	10%	33 V	
	R120	1-247-129-00	CARBON	820		/4W		C320	1-130-474-00	MYLAR	0.0018MF	5%	50 V	
	R121	1-247-862-00	CARBON		5% 1,	/6W		C322	1-123-330-00	ELECT	22MF	20%	10V	
	R122	1-247-862-00	CARBON			/6W		C323	1-123-356-00	ELECT	10MF	20%	167	
	R123	1-247-862-00	CARBON			/6W		C324	1-123-382-00	ELECT	3.3MF	20%	50V	
	R124	1-247-809-00	CARBON	120	5% 1,	/6W		C325	1-123-380-00	ELECT	1MF	20%	50V	
	R125	1-249-437-11	CARBON	474	·									
	R126	1-247-700-11	CARBON			/6W		C326	1-102-959-00	CERAMIC	22PF	5%	50 V	
	R130	1-247-857-00	CARBON			/4W		C327	1-130-495-00	MYLAR	0.1MF	5%	50 V	
	R131	1-247-857-00	CARBON			/6W		C328	1-123-369-00	ELECT	4.7MF	20%	25 V	
	R134	1-247-867-00	CARBON			/6W /6W		C329	1-123-356-00	ELECT	10MF	20%	16 V	
		1 217 007 00	Criticon	33K	Jh 1/	OW		C330	1-130-471-00	MYLAR	0.001MF	5%	50 V	
	R135	1-247-863-00	CARBON	22K	5% 1/	/6W		C331	1-123-307-00	ELECT	100MF	20%	6.3V	
	R136	1-247-829-00	CARBON	820	5% 1/	/6W		C333	1-130-471-00	MYLAR	0.001MF	5%	50V	
								C334	1-130-495-00	MYLAR	0.1MF	5%	50 V	
		TER	RMISTOR					C350	1-123-330-00	ELECT	22MF	20%	100	
	TUDOO	141 000 000 11	THERMTOTOR	/2002				C360	1-130-486-00	MYLAR	0.018MF	5%	50 V	
	וחרטט	1∆1 -806-886-11	THERMI STOR	(POSTITVE	) 10									
	****	******	*****	******	*****	*****	*****	C370	1-161-025-00	CERAMIC	0.1MF	10%	25 V	
								C371 C401	1-123-356-00	ELECT	10MF	20%	16V	
		*A-7060-154-A	PC-14B BOAR	D. COMPLET	ΓF			C401	1-124-284-00	ELECT	10MF	20%	167	
			****	*****	*			C403	1-123-330-00	ELECT	22MF	20%	100	
								C707	1-123-307-00	ELECT	100MF	20%	6.3V	
		CAP	ACITOR				J	C405	1-123-330-00	ELECT	22MF	20%	107	
	0011						İ	C407	1-136-160-00	MYLAR	0.039MF	5%	50V	
	C211	1-123-330-00	ELECT	22MF	20%		6V	C408	1-102-978-00	CERAMIC	220PF	5%	50V	
	C212	1-123-306-00	ELECT	47MF	20%		.3V	C409	1-102-942-00	CERAMIC	5PF	1PF	50V	
	C213	1-123-356-00	ELECT	10MF	20%		6 V	C410	1-130-479-00	MYLAR	0.0047MF	5%	50V	
	C214 C215	1-161-013-00 1-123-369-00	CERAMIC	0.01MF	10%		5 V							
	C213	1-123-309-00	ELECT	4.7MF	20%	25	5 V	C412	1-123-306-00	ELECT	47MF	20%	6.3V	
	C216	1-123-306-00	ELECT	47MF	204	-	21/	C413	1-123-318-00	ELECT	33MF	20%	101	
	C217	1-123-607-00	ELECT	0.1MF	20% 20%		.3V	C414	1-130-482-00	MYLAR	0.0082MF	5%	50 V	
	C218	1-123-356-00	ELECT	10MF	20%		00	C415	1-102-116-00	CERAMIC	680PF	10%	50V	
	C219	1-123-306-00	ELECT	47MF	20%		.3V	C416	1-123-380-00	ELECT	1MF	20%	50V	
	C220	1-123-356-00	ELECT	10MF	20%			C417	1-131-383-00	TANTALUM	10ME	100	c 211	
					2010		"	C418	1-131-343-00	TANTALUM	10MF 0.22MF	10% 10%	6.3V 35V	
	C221	1-123-607-00	ELECT	0.1MF	20%	50	ov l	C420	1-130-474-00	MYLAR	0.0018MF	5%	50V	
	C222	1-123-356-00	ELECT	10MF	20%			C422	1-123-330-00	ELECT	22MF	20%	10V	
	C223	1-123-330-00	ELECT	22MF	20%	16	V		1-123-356-00	ELECT	10MF	20%	16V	
	C225	1-123-369-00	ELECT	4.7MF	20%	25	٧				20711		101	
	C251	1-161-013-00	CERAMIC	0.01MF	10%	25	٧	C424	1-123-382-00	ELECT	3.3MF	20%	50V	
	C254	1 100 200 00	EL EOT	****					1-123-380-00	ELECT	1MF	20%	50V	
	C301		ELECT	1MF	20%	50			1-102-959-00	CERAMIC	22PF	5%	50V	
	C303	1-124-284-00 1-123-330-00	ELECT	10MF	20%	16			1-130-495-00	MYLAR	0.1MF	5%	50 V	
	C304	1-123-330-00	ELECT	22MF	20%	10		C428	1-123-369-00	ELECT	4.7MF	20%	25 V	
	C305		ELECT	100MF 22MF	20%		34	0400	1 100 056 00					
				CCIN.	20%	10	•		1-123-356-00 1-130-471-00	ELECT MYLAR	10MF	20%	16V	
	C307	1-136-160-00	MYLAR	0.039MF	5%	50	v l		1-123-307-00	ELECT	0.001MF 100MF	5% 20%	507	
	C308		CERAMIC	220PF	5%	50				MYLAR	0.001MF	20% 5%	6.3V	
	C309		CERAMIC	5PF	1PF	50				MYLAR	0.1MF	5% 5%	50V 50V	
	C310		MYLAR	0.0047MF	5%	50		, •		בו ווו	0.1111	J /6	20.4	
	C312	1-123-306-00	ELECT	47MF	20%	6.		C450	1-123-330-00	ELECT	22MF	20%	10V	
	C212	1 100 010 00	51 507							MYLAR	0.018MF	5%	50V	
	C313	1-123-318-00	FLECT	33MF	20%	10	v i	C470	1-161-025-00	CERAMIC	0.1MF	10%	25 V	

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

## PC-14B

Dof N	o Part No.	Docamintion			Damad	D - 6 N					. *
	o Part No.	Description			Remark	ReT.N	o Part No.	Description			Remark
C471 C501 C502 C503 C504	1-123-356-00 1-123-307-00 1-123-330-00 1-123-356-00 1-123-380-00	ELECT ELECT ELECT	10MF 100MF 22MF 10MF 1MF	20% 20% 20% 20% 20%	16V 6.3V 16V 16V 50V	C619 C620 C621 C622 C623	1-123-307-00 1-123-307-00 1-161-039-00 1-161-039-00 1-123-307-00		100MF 100MF 0.001MF 0.001MF 100MF	20% 20% 10% 10% 20%	6.3V 6.3V 25V 25V 6.3V
C505 C506 C507 C508 C509	1-123-356-00 1-130-482-00 1-102-116-00 1-136-160-00 1-102-978-00	MYLAR CERAMIC	10MF 0.0082MF 680PF 0.039MF 220PF	20% 5% 10% 5% 5%	16V 50V 50V 50V 50V	C624 C625 C626 C628 C629	1-123-306-00 1-123-306-00 1-123-306-00 1-123-307-00 1-123-306-00	ELECT ELECT ELECT ELECT	47MF 47MF 47MF 100MF 47MF	20% 20% 20% 20% 20%	10V 10V 10V 6.3V 6.3V
C510 C511 C512 C513 C514	1-102-942-00 1-130-479-00 1-123-356-00 1-102-824-00 1-123-308-00	CERAMIC MYLAR ELECT CERAMIC ELECT	5PF 0.0047MF 10MF 470PF 220MF	1PF 5% 20% 5% 20%	50V 50V 16V 50V 6.3V	C633 C650 C660 C661 C680	1-123-307-00 1-161-013-00 1-123-333-00 1-123-333-00 1-123-307-00	ELECT CERAMIC ELECT ELECT ELECT	100MF 0.01MF 100MF 100MF 100MF	20% 10% 20% 20% 20%	6.3V 25V 16V 16V 6.3V
C516 C517 C518 C519 C520	1-123-307-00 1-123-381-00 1-161-013-00 1-130-475-00 1-130-478-00	ELECT ELECT CERAMIC MYLAR MYLAR	100MF 2.2MF 0.01MF 0.0022MF 0.0039MF	20% 20% 10% 5%	6.3V 50V 25V 50V 50V	C851 C852 C853 C854 C855	1-161-013-00 1-161-013-00 1-123-330-00 1-161-013-00 1-161-013-00	CERAMIC CERAMIC ELECT CERAMIC CERAMIC	0.01MF 0.01MF 22MF 0.01MF 0.01MF	10% 10% 20% 10% 10%	25V 25V 16V 25V 25V
C521 C522 C523 C524 C525	1-102-978-00 1-130-473-00 1-123-379-00 1-102-116-00 1-161-013-00	CERAMIC MYLAR ELECT CERAMIC CERAMIC	220PF 0.0015MF 0.47MF 680PF 0.01MF	5% 5% 20% 10% 10%	50V 50V 50V 50V 25V	C856 C857 C858 C859 C860	1-161-057-00 1-161-057-00 1-123-380-00 1-123-330-00 1-161-013-00	CERAMIC CERAMIC ELECT ELECT CERAMIC	0.033MF 0.033MF 1MF 22MF 0.01MF	10% 10% 20% 20% 10%	25V 25V 50V 16V 25V
C527 C528 C529 C530 C531	1-161-013-00 1-130-475-00 1-101-880-00 1-123-380-00 1-123-307-00	CERAMIC MYLAR CERAMIC ELECT ELECT	0.01MF 0.0022MF 47PF 1MF 100MF	10% 5% 5% 20% 20%	25V 50V 50V 50V 6.3V	C861 C862 C863 C864	1-161-013-00 1-161-057-00 1-161-057-00 1-123-380-00	CERAMIC CERAMIC CERAMIC ELECT	0.01MF 0.033MF 0.033MF 1MF	10% 10% 10% 20%	25V 25V 25V 50V
C532	1-161-013-00	CERAMIC	0.01MF	1.0%	25 V		CON	NECTOR			
C533 C581 C582 C590	1-161-013-00 1-161-013-00 1-161-013-00 1-123-356-00	CERAMIC CERAMIC CERAMIC ELECT	0.01MF 0.01MF 0.01MF 10MF	10% 10% 10% 10% 20%	25V 25V 25V 25V 16V	CN110 CN601 CN602	*1-560-894-00 *1-560-897-00 *1-560-894-00 *1-560-892-00 *1-564-030-00	PIN, CONNECTO PIN, CONNECTO PIN, CONNECTO	OR 9P OR 6P OR 4P		
C591 C592 C601 C602 C603	1-123-356-00 1-123-356-00 1-123-306-00 1-123-306-00 1-123-306-00	ELECT ELECT ELECT ELECT ELECT	10MF 10MF 47MF 47MF 47MF	20% 20% 20% 20% 20%	16V 16V 10V 10V 6.3V	CN604 CN605 CN606 CN607	*1-560-896-00 *1-560-891-00 *1-560-893-00 *1-560-891-00	PIN, CONNECTO PIN, CONNECTO PIN, CONNECTO PIN, CONNECTO	OR 8P OR 3P OR 5P OR 3P		
C604 C605 C606 C607 C608	1-123-330-00 1-123-330-00 1-123-306-00 1-123-306-00 1-123-307-00	ELECT ELECT ELECT ELECT ELECT	22MF 22MF 47MF 47MF 100MF	20% 20% 20% 20% 20%	16V 16V 10V 10V 6.3V	CN609 CN611 CN701 CN851	*1-564-029-00	PIN, CONNECTO PIN, CONNECTO PIN, CONNECTO PIN, CONNECTO PIN, CONNECTO PIN, CONNECTO	OR 3P OR 7P OR 8P OR 4P		
C609 C610	1-123-306-00 1-123-306-00	ELECT ELECT	47MF 47MF	20% 20%	6.3V 6.3V						
C611	1-161-013-00	CERAMIC	0.01MF	10%	25V		CMPL	SITION CIRCUI	1 BLUCK		
C612 C613	1-123-356-00 1-103-709-00	ELECT POLYSTYRENE	10MF 220PF	20% 5%	16V 50V	CP003	1-232-809-11 1-232-803-11 1-232-874-11	COMPOSITION COMPOS	IRCUIT BLOCK	(	
C614 C616	1-123-307-00 1-131-408-00	ELECT TANTALUM	100MF	20%	6.3V	CP006	1-232-801-11	COMPOSITION C	IRCUIT BLOCK	<	
C617	1-131-408-00	TANTALUM	1MF 1MF	10% 10%	25V 25V	CP007	1-232-876-11	COMPOSITION C	IKCUIT BLOCK		

### **PC-14B**

	Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description				Remark
,	CP009 CP010 CP011	1-232-873-11 1-232-800-11 1-232-864-11 1-232-865-11 1-232-866-11	COMPOSITION CIRCUIT BLOCK		IC610 IC611 IC612	8-759-240-52 8-759-700-40 8-759-340-52 8-759-240-53 8-759-700-39	IC NJM4560S IC HD14052BP IC TC4053BP				
	CP015 CP018 CP019	1-232-860-11 1-232-867-11 1-232-808-11 1-232-807-11 1-232-806-11	COMPOSITION CIRCUIT BLOCK		IC616 IC617 IC618	8-759-340-52 8-759-700-08 8-759-961-38 8-759-914-44 8-759-700-40	IC NJM4558S IC BA6138 IC TL431CLPB				
	CP021 CP022	1-232-868-11 1-232-875-11	COMPOSITION CIRCUIT BLOCK COMPOSITION CIRCUIT BLOCK		10621	8-759-700-40	IC NJM4560S				
		1-232-805-12 1-232-796-12	COMPOSITION CIRCUIT BLOCK			JAC	K				
		1-232-945-11	COMPOSITION CIRCUIT BLOCK		J601	1-562-838-21	JACK, PIN 4P	(AUDIO	OUT)		
		1-232-883-11	COMPOSITION CIRCUIT BLOCK COMPOSITION CIRCUIT BLOCK	ĺ		<u>C01</u>	L				
	CP603 CP604	1-232-811-11 1-232-810-11 1-232-908-11	COMPOSITION CIRCUIT BLOCK COMPOSITION CIRCUIT BLOCK			1-408-619-41 1-408-421-00					
	CP852	1-232-797-11	COMPOSITION CIRCUIT BLOCK			TRA	NSISTOR				
	CP853	1-232-798-11 1-232-797-11	COMPOSITION CIRCUIT BLOCK COMPOSITION CIRCUIT BLOCK		0214 0216 0290	8-729-178-54 8-729-178-54 8-729-679-82	TRANSISTOR 25 TRANSISTOR 25	SC2785 SA798			
		DIO			Q291 Q301	8-729-699-51 8-729-606-33					
	D211 D212 D214 D251 D301	8-719-911-19 8-719-000-12 8-719-000-12 8-719-911-19 8-719-118-07	DIODE MC931 DIODE MC931		Q302 Q303 Q401 Q402 Q403	8-729-245-83 8-729-245-83 8-729-606-33 8-729-245-83 8-729-245-83	TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S	5C2458 5C2458 5C2603 5C2458			
	D308 D401 D570 D650 D652	8-719-118-07			0501 0503 0504	8-729-245-83 8-729-900-89 8-729-900-89 8-729-204-83	TRANSISTOR 2S TRANSISTOR DT TRANSISTOR DT	5C2458 FC144ES FC144ES			
		FILT	TER		Q510	8-729-204-83	TRANSISTOR 2S	A1048-	GR		
	FL401 FL501 FL851	1-235-565-11 1-235-484-11 1-235-517-21	FILTER, LOW PASS FILTER, LOW PASS FILTER, BAND PASS (1.5MHZ) FILTER, BAND PASS (230KHZ) FILTER, BAND PASS (230KHZ)		Q602 Q603 Q650 Q651	8-729-178-54 8-729-204-83 8-729-178-54 8-729-178-54 8-729-178-54	TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S	A1048- C2785 C2785 C2785		•	
		<u>IC</u>			Q653		TRANSISTOR 2S	C2785			
	IC501 IC502 IC601	8-752-013-70 8-759-700-40 8-752-014-80	IC NJM4560S IC CX20137 IC NJM4560S IC CX20148 IC HD14053BP		Q852 Q853 Q854	8-729-178-54 8-729-204-83 8-729-178-54 8-729-178-54 8-729-204-83	TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S	A1048- C2785 C2785			
			IC CX23060			8-729-178-54	TRANSISTOR 25		υK		
	IC605 IC606	8-759-700-39 8-759-700-40	IC CX23060 IC NJM4562S-D IC NJM4560S IC NJM4560S		D21 6		STOR	10"	F~		
			IC TC4052BP		R216 R227	1-249-429-11 1-249-429-11	CARBON CARBON	10K 10K	5% 5%	1/6W 1/6W	

## PC-14B

Ref.N	o Part No.	Description				Remark	Ref.No	Part No.	Description				Remark
R251	1-249-419-11	CARBON	1.5K	5%	1/6W		R466	1-247-851-00	CARBON	6.8K	5%	1/6W	
R252	1-249-419-11	CARBON	1.5K	5%	1/6W		R470	1-247-883-00	CARBON	150K	5%	1/6W	
R254 R255	1-247-841-00	CARBON CARBON	2.7K 2.7K	5% 5%	1/6W 1/6W		R501 R502	1-247-851-00	CARBON	6.8K	5%	1/6W	
R301	1-247-817-00	CARBON	270	5%	1/6W		R503	1-249-429-11 1-247-843-00	CARBON CARBON	10K 3.3K	5% 5%	1/6W 1/6W	
R309	1-249-429-11	CARBON	10K	5%	1/6W		R504	1-247-843-00	CARBON	3.3K	5%	1/6W	
R313	1-249-429-11	CARBON	10K	5%	1/6W		R505	1-247-841-00	CARBON	2.7K	5%	1/6W	
R314 R322	1-247-867-00 1-247-841-00	CARBON	33K	5%	1/6W		R512	1-247-829-00	CARBON	820	5%	1/6W	
R323	1-249-429-11	CARBON CARBON	2.7K 10K	5% 5%	1/6W 1/6W		R513 R514	1-247-829-00 1-247-869-00	CARBON CARBON	820 39K	5% 5%	1/6W 1/6W	
R327	1-247-843-00	CARBON	3.3K	5%	1/61/		R515	1-247-831-00	CARBON	1K	5%	1/6W	
R328	1-247-843-00	CARBON	3.3K	5%	1/6W		R517	1-247-847-00	CARBON	4.7K	5%	1/6W	
R329	1-247-847-00	CARBON	4.7K	5%	1/6W		R518	1-247-889-00	CARBON	270K	5%	1/6W	
R330 R332	1-247-825-00 1-249-421-11	CARBON CARBON	560	5%	1/6W		R519	1-247-903-00	CARBON	1M	5%	1/6W	
			2.2K	5%	1/6W		R520	1-247-847-00	CARBON	4.7K	5%	1/6W	
R333 R334	1-249-421-11 1-247-854-00	CARBON CARBON	2.2K	5%	1/6W	İ	R521	1-247-847-00	CARBON	4.7K	5%	1/6W	
R335	1-247-877-00	CARBON	9.1K 82K	5% 5%	1/6W 1/6W		R522 R523	1-247-847-00 1-247-862-00	CARBON CARBON	4.7K	5%	1/6W	
R338	1-247-837-00	CARBON	1.8K	5%	1/6W		R524	1-249-434-11	CARBON	20K 27K	5% 5%	1/6W 1/6W	
R339	1-247-891-00	CARBON	330K	5%	1/6W		R525	1-247-861-00	CARBON	18K	5%	1/6W	
R340	1-247-841-00	CARBON	2.7K	5%	1/6W		R526	1-247-863-00	CARBON	22K	5%	1/6W	
R345	1-247-815-00	CARBON	220	5%	1/6W		R527	1-247-861-00	CARBON	18K	5%	1/6W	
R346 R348	1-247-833-00	CARBON CARBON	1.2K	5%	1/6W	ĺ	R528	1-247-831-00	CARBON	1K	5%	1/6W	
R360	1-249-437-11	CARBON	1.8K 47K	5% 5%	1/6W 1/6W		R529 R530	1-249-437-11 1-247-831-00	CARBON CARBON	47K	5%	1/6W	
R363	*									1K	5%	1/6W	
R364	1-247-879-00 1-247-887-00	CARBON CARBON	100K 220K	5% 5%	1/6W 1/6W		R531 R533	1-247-823-00	CARBON	470	5%	1/6W	
R365	1-247-857-00	CARBON	12K	5%	1/6W		R535	1-247-831-00 1-247-845-00	CARBON CARBON	1K 3.9K	5% 5%	1/6W 1/6W	
R366	1-247-851-00	CARBON	6.8K	5%	1/6W		R536	1-247-831-00	CARBON	1K	5%	1/6W	
R370	1-247-883-00	CARBON	150K	5%	1/6W		R537	1-247-867-00	CARBON	33K	5%	1/6W	
R401	1-247-817-00	CARBON	270	5%	1/6W		R538	1-247-875-00	CARBON	68K	5%	1/6W	
R409 R413	1-249-429-11	CARBON	10K	5%	1/6W			1-247-831-00	CARBON	1K	5%	1/6W	
R414	1-249-429-11 1-247-867-00	CARBON CARBON	10K 33K	5% 5%	1/6W 1/6W	1		1-247-861-00	CARBON	18K	5%	1/6W	
R423	1-249-429-11	CARBON	10K	5%	1/6W			1-247-851-00 1-247-837-00	CARBON CARBON	6.8K 1.8K	5% 5%	1/6W 1/6W	
R427	1-247-843-00	CARBON	3.3K	5%	1/6W		R557	1-247-845-00	CARBON	3.9K	5%	1/64	
R428	1-247-843-00	CARBON	3.3K	5%	1/6W			1-247-847-00	CARBON	4.7K	5%	1/61/	
R429 R430	1-247-847-00 1-247-825-00	CARBON CARBON	4.7K 560	5% 5%	1/6W 1/6W			1-247-867-00	CARBON	33K	5%	1/6W	
R432	1-249-421-11	CARBON	2.2K	5%	1/6W			1-247-867-00 1-249-429-11	CARBON CARBON	33K 10K	5% 5%	1/6W 1/6W	
R433	1-249-421-11	CARBON	2.2K	5%	1/6W		R607	1-215-438-00	METAL	5.1K	1%	1/6W	
R434	1-247-854-00	CARBON		5%	1/6W			1-247-847-00	CARBON	4.7K		1/6W	
R435 R438	1-247-877-00	CARBON	82K	5%	1/6W			1-247-804-00	CARBON	75	5%	1/6W	
R439	1-247-837-00	CARBON CARBON	1.8K 330K	5% 5%	1/6W 1/6W			1-247-811-00	CARBON	150	5%	1/6W	
							R628	1-215-423-00	METAL	1.2K	1%	1/6W	
R440 R445	1-247-841-00 1-247-815-00	CARBON		5% 5%	1/6W		R629	1-215-431-00	METAL		1%	1/6W	
R446	1-247-813-00	CARBON CARBON		5% 5%	1/6W 1/6W			1-247-821-00 1-247-831-00	CARBON	390	5%	1/6W	
R448	1-247-837-00	CARBON		5%	1/6W			1-215-485-00	METAL	1K 470K	5% 1%	1/6W 1/6W	
R460	1-249-437-11	CARBON	47K	5%	1/6W			1-247-901-00	CARBON	820K	5%	1/6W	
R463	1-247-879-00	CARBON		5%	1/6W			1-247-807-00	CARBON	100	5%	1/6W	
R464 R465	1-247-887-00 1-247-857-00	CARBON		5% 5%	1/6W	i	R640	1-247-807-00	CARBON	100	5%	1/6W	
11700	1-24/-00/-00	CARBON	12K	5%	1/6W	1	R641	1-249-429-11	CARBON	10K	5%	1/6W	

# PC-14B VI-9AG

Ref.N	o Part No.	Description	1		Remark	Ref.No	Part No.	Description			Remark
R650 R654 R658 R659 R660	1-249-429-11 1-249-437-11 1-247-830-00 1-247-821-00 1-247-821-00	CARBON CARBON CARBON CARBON CARBON	10K 5% 47K 5% 910 5% 390 5% 390 5%	1/6k 1/6k 1/6k	1.	C025 C026 C027 C028 C029	1-101-006-00 1-101-006-00 1-123-608-00 1-123-356-00 1-123-356-00	CERAMIC CERAMIC ELECT ELECT ELECT	0.047MF 0.047MF 0.22MF 10MF 10MF	20% 20% 20%	50V 50V 50V 16V 16V
R851 R852 R853	1-247-831-00 1-247-829-00 1-247-829-00	CARBON CARBON CARBON	1K 5% 820 5% 820 5%	1/6W		C030 C031 C032 C033 C034	1-102-820-00 1-102-973-00 1-102-820-00 1-102-942-00	CERAMIC CERAMIC CERAMIC CERAMIC	330PF 100PF 330PF 5PF	5% 5% 5% 0.5PF	50V 50V 50V 50V
	VAF	RIABLE RESIST	OR			1 034	1-102-959-00	CERAMIC	22PF	5%	507
RV301 RV304 RV401 RV404 RV501	1-228-995-00 1-228-991-00 1-228-995-00 1-228-991-00 1-228-995-00	RES, ADJ, C RES, ADJ, C RES, ADJ, C RES, ADJ, C RES, ADJ, C	ARBON 2.2K ARBON 22K ARBON 2.2K			C035 C038 C040 C041 C042	1-102-959-00 1-101-006-00 1-102-125-00 1-101-361-00 1-123-369-00	CERAMIC CERAMIC CERAMIC CERAMIC ELECT	22PF 0.047MF 0.0047MF 150PF 4.7MF	5% 10% 5% 20%	50V 50V 50V 50V 25V
	1-228-994-00 1-228-993-00 1-228-999-00	RES, ADJ, C RES, ADJ, C RES, ADJ, C	ARBON 4.7K ARBON 470K	*****	*****	C045 C046 C049 C050 C052	1-123-382-00 1-101-880-00 1-101-006-00 1-102-980-00 1-101-005-00	ELECT CERAMIC CERAMIC CERAMIC CERAMIC	3.3MF 47PF 0.047MF 270PF 0.022MF	20% 5% 5%	50V 50V 50V 50V
	*A-7060-610-A <u>CAP</u>	VI-9AG BOAR				C053 C054 C056 C057 C058	1-101-006-00 1-101-004-00 1-102-945-00 1-102-963-00 1-101-006-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	0.047MF 0.01MF 8PF 33PF 0.047MF	0.5PF 5%	50V 50V 50V 50V 50V
CO01 CO02 CO03 CO04 CO06	1-161-025-00 1-102-824-00 1-101-006-00 1-161-025-00 1-102-074-00	CERAMIC CERAMIC CERAMIC	0.1MF 470PF 0.047MF 0.1MF 0.001MF	10% 5% 10% 10%	25 V 50 V 50 V 25 V 50 V	C059 C060 C061 C064 C065	1-102-976-00 1-102-976-00 1-101-361-00 1-102-976-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	180PF 180PF 150PF 180PF 82PF	5% 5% 5% 5% 5%	50V 50V 50V 50V 50V
CO07 CO08 CO09 CO10 CO11	1-101-006-00 1-123-356-00 1-123-356-00 1-123-356-00 1-101-006-00	CERAMIC ELECT ELECT ELECT CERAMIC	0.047MF 10MF 10MF 10MF 0.047MF	20% 20% 20%	50V 16V 16V 16V 50V	C066 C067 C068 C073 C076	1-102-960-00 1-101-006-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	9PF 330PF 24PF 0.047MF 10PF	0.5PF 5% 5%	50V 50V 50V 50V 50V
CO12 CO13 CO14 CO15 CO16 CO17	1-101-006-00 1-123-380-00 1-123-309-00 1-123-330-00 1-123-369-00 1-123-369-00	CERAMIC ELECT ELECT ELECT ELECT ELECT	0.047MF 1MF 330MF 22MF 4.7MF 4.7MF	20% 20% 20% 20% 20%	50V 50V 6.3V 16V 25V	C100 C101 C102 C103 C104	1-102-074-00 1-101-004-00 1-101-884-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	0.047MF 0.001MF 0.01MF 56PF 22PF	10% 5% 5%	50V 50V 50V 50V 50V
CO19 CO20 CO21 CO22 CO23 CO24	1-123-356-00 1-101-006-00 1-101-888-00 1-101-888-00 1-102-976-00 1-101-004-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	10MF 0.047MF 68PF 68PF 180PF 0.01MF	20% 5% 5% 5%	50V 50V 50V 50V 50V 50V	C105 C106 C107	1-123-369-00	ELECT ELECT CERAMIC	2.2MF 4.7MF 56PF	20% 20% 5%	50V 25V 50V

Ref.	No Part No.	Description	<u>n</u>		Remark	, Ref.	No Part No.	Description	<u>1</u>		Remark
C109 C110 C111 C112 C114	1-101-006-00 1-123-381-00 1-123-369-00 1-123-369-00 1-102-942-00	ELECT ELECT ELECT	0.047MF 2.2MF 4.7MF 4.7MF 5PF	20% 20% 20% 0.5PF	50V 50V 25V 25V 50V	C203 C204 C206 C207 C208	1-101-004-00 1-101-004-00 1-101-004-00 1-102-074-00 1-102-942-00	CERAMIC CERAMIC	0.01MF 0.01MF 0.01MF 0.001MF 5PF	10% 0.5PF	50V 50V 50V 50V 50V
C115 C116 C117 C118 C119	1-101-888-00 1-102-815-00 1-102-978-00 1-123-307-00 1-101-888-00	CERAMIC CERAMIC ELECT	68PF 110PF 220PF 100MF 68PF	5% 5% 5% 20% 5%	50V 50V 50V 6.3V 50V	C209 C210 C211 C212 C213	1-123-356-00 1-101-004-00 1-102-820-00 1-101-004-00 1-102-820-00	ELECT CERAMIC CERAMIC CERAMIC CERAMIC	10MF 0.01MF 330PF 0.01MF 330PF	20% 5% 5%	16V 50V 50V 50V 50V
C120 C121 C122 C123 C124	1-101-886-00 1-101-004-00 1-101-884-00 1-101-004-00 1-102-959-00	CERAMIC CERAMIC CERAMIC	62PF 0.01MF 56PF 0.01MF 22PF	5% 5% 5%	50V 50V 50V 50V 50V	C214 C215 C216 C217 C218	1-101-006-00 1-102-820-00 1-102-947-00 1-102-966-00 1-102-074-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	0.047MF 330PF 10PF 43PF 0.001MF	5% 5% 5% 10%	50V 50V 50V 50V 50V
C125 C126 C127 C128 C129	1-123-356-00 1-102-074-00 1-102-074-00 1-101-006-00 1-123-308-00	CERAMIC CERAMIC CERAMIC	10MF 0.001MF 0.001MF 0.047MF 220MF	20% 10% 10% 20%	16V 50V 50V 50V 6.3V	C219 C220 C221 C222 C223	1-102-820-00 1-102-820-00 1-101-004-00 1-124-239-00 1-101-005-00	CERAMIC CERAMIC CERAMIC ELECT CERAMIC	330PF 330PF 0.01MF 6.8MF 0.022MF	5% 5% 20%	50V 50V 50V 25V 50V
C130 C131 C132 C133 C135	1-101-006-00 1-101-006-00 1-123-330-00 1-101-004-00 1-102-074-00	CERAMIC CERAMIC ELECT CERAMIC CERAMIC	0.047MF 0.047MF 22MF 0.01MF 0.001MF	20%	50V 50V 16V 50V 50V	C224 C225 C227 C228 C229	1-123-369-00 1-123-356-00 1-101-004-00 1-101-006-00 1-123-381-00	ELECT ELECT CERAMIC CERAMIC ELECT	4.7MF 10MF 0.01MF 0.047MF 2.2MF	20% 20% 20%	25V 16V 50V 50V 50V
C136 C137 C139 C140 C141	1-102-966-00 1-102-074-00 1-102-074-00 1-102-127-00 1-123-382-00	CERAMIC CERAMIC CERAMIC CERAMIC ELECT	43PF 0.001MF 0.001MF 0.0068MF 3.3MF	5% 10% 10% 10% 20%	50V 50V 50V 50V 50V	C230 C231 C232 C233 C234	1-123-608-00 1-101-005-00 1-102-074-00 1-101-006-00 1-123-381-00	ELECT CERAMIC CERAMIC CERAMIC ELECT	0.22MF 0.022MF 0.001MF 0.047MF 2.2MF	20% 10% 20%	50V 50V 50V 50V
C142 C143 C144 C145 C146	1-102-074-00 1-102-074-00 1-101-006-00 1-123-356-00 1-102-815-00	CERAMIC CERAMIC CERAMIC ELECT CERAMIC	0.001MF 0.001MF 0.047MF 10MF 110PF	10% 10% 20% 5%	50V 50V 50V 16V 50V	C235 C237 C238 C239 C240	1-102-125-00 1-101-880-00 1-102-820-00 1-102-074-00 1-123-381-00	CERAMIC CERAMIC CERAMIC CERAMIC ELECT	0.0047MF 47PF 330PF 0.001MF 2.2MF	10% 5% 5% 10% 20%	50V 50V 50V 50V
C147 C148 C150 C151 C152	1-101-004-00 1-102-074-00 1-102-074-00 1-101-361-00 1-102-824-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	0.01MF 0.001MF 0.001MF 150PF 470PF	10% 10% 5% 5%	50V 50V 50V 50V 50V	C241 C244 C247 C248 C249	1-102-074-00 1-101-880-00 1-123-356-00 1-101-006-00 1-102-820-00	CERAMIC CERAMIC ELECT CERAMIC CERAMIC	0.001MF 47PF 10MF 0.047MF 330PF	10% 5% 20%	50V 50V 16V 50V 50V
C153 C154 C156 C159 C160	1-102-953-00 1-123-381-00 1-102-953-00 1-124-239-00 1-123-330-00	CERAMIC ELECT CERAMIC ELECT ELECT	18PF 2.2MF 18PF 6.8MF 22MF		50V 50V 50V 25V 16V	C250 C251 C252 C253 C254	1-123-609-00 1-102-963-00 1-102-973-00	ELECT ELECT CERAMIC CERAMIC CERAMIC	0.1MF 0.33MF 33PF 100PF 47PF	20% 20% 5% 5% 5%	50V 50V 50V 50V 50V
C161 C162 C163 C164 C172	1-101-884-00 1-102-978-00 1-102-978-00		33PF 56PF 220PF 220PF 47PF	5% 5% 5%	50V 50V 50V 50V 50V	C255 C256 C257 C258 C259	1-123-356-00 1-161-025-00 1-101-888-00	CERAMIC ELECT CERAMIC CERAMIC CERAMIC	47PF 10MF 0.1MF 68PF 15PF	5% 20% 10% 5% 5%	50V 16V 25V 50V 50V
C200 C201 C202	1-101-006-00 1-101-006-00 1-101-004-00	CERAMIC CERAMIC CERAMIC	0.047MF 0.047MF 0.01MF		50V 50V 50V	C260 C261 C262	1-102-945-00	CERAMIC CERAMIC CERAMIC	180PF 8PF 0.047MF	5% 0.5PF	50V 50V 50V

R	ef.N	Part No.	Description			Remark	Ref.N	o Part No.	Description	Remark
C:	264 265 266 267 269	1-101-006-00 1-101-004-00 1-101-006-00 1-101-006-00 1-101-004-00	CERAMIC CERAMIC CERAMIC	0.047MF 0.01MF 0.047MF 0.047MF 0.01MF		50V 50V 50V 50V 50V	D001 D002 D003	8-719-151-07 8-719-815-87	DIODE 1SS119 DIODE RD5.1E-B DIODE 1S1587	
C2 C3 C3	270 271 300 301 302	1-102-074-00 1-101-004-00 1-123-607-00 1-102-973-00 1-123-607-00	CERAMIC ELECT CERAMIC	0.001MF 0.01MF 0.1MF 100PF 0.1MF	10% 20% 5% 20%	50V 50V 50V 50V 50V	D004 D005 D006 D008 D009	8-719-815-87 8-719-815-87 8-719-815-87 8-719-911-19 8-719-911-19		
03 03 05	303 304 305 501 502	1-102-973-00 1-123-381-00 1-123-380-00 1-101-361-00 1-101-004-00	ELECT ELECT CERAMIC	100PF 2.2MF 1MF 150PF 0.01MF	5% 20% 20% 5%	50V 50V 50V 50V 50V	D102 D103 D106 D107	8-719-815-87 8-719-000-12 8-719-000-06 8-719-000-12 8-719-000-12	DIODE MC921 DIODE MC931 DIODE MC931	
80 80 <b>0</b>		1-102-973-00 1-130-473-00 1-101-004-00 1-102-947-00 1-101-004-00	MYLAR CERAMIC CERAMIC	100PF 0.0015MF 0.01MF 10PF 0.01MF	5% 5%	50V 50V 50V 50V 50V	D200 D203 D204 D950 D951	8-719-000-06 8-719-911-19	DIODE RD6.2EB1 DIODE MC921 DIODE MC921 DIODE 1SS119 DIODE 1SS119	
		CON	NCETOR					DEL	AY LINE	
CN CN	1003 1004	*1-560-890-00 *1-560-895-00 *1-560-890-00 1-561-534-00	PIN, CONNECTO	OR 7P			DL100 DL101	1-415-282-31 1-415-386-21	DELAY LINE DELAY LINE, 1H (13.3MHZ)	
		*1-560-893-00		OR 5P				FIL	TER	
CN	1012	*1-560-896-00 *1-560-893-00 *1-564-187-00	PIN, CONNECTO	OR 5P OR			FL101 FL200 FL201	1-235-440-11 1-235-441-11 1-409-408-11 1-409-396-11 1-235-437-11	REC C TRAP	
CP	001	1-232-919-11			Y			<u>1C</u>		
CP CP CP	003 004 005 006	1-232-914-11 1-232-917-11 1-232-918-11 1-232-928-11 1-232-935-11	COMPOSITION ( COMPOSITION ( COMPOSITION ( COMPOSITION (	CIRCUIT BLOCK CIRCUIT BLOCK CIRCUIT BLOCK CIRCUIT BLOCK CIRCUIT BLOCK	K			8-752-013-00	IC CX20130 IC CX20131 IC CX20132 CX22031 IC CX23064	
CP	O12 O13	1-232-922-11 1-232-920-11 1-232-938-11 1-232-915-11	COMPOSITION C	CIRCUIT BLOCK CIRCUIT BLOCK	<		IC006 IC007 IC008	1-235-497-11 8-759-700-40		
		1-232-912-11 1-232-931-11	COMPOSITION C					<u>C101</u>	-	,
CP( CP(	O17 O19 O20 O21	1-232-913-11 1-232-916-11 1-232-932-11 1-232-936-11	COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMPOSITION COMP	IRCUIT BLOCK IRCUIT BLOCK IRCUIT BLOCK IRCUIT BLOCK		1	L001 L002 L004 L005 L006	1-408-413-00 1-408-425-00 1-408-426-00	MICRO INDUCTOR 100UH MICRO INDUCTOR 22UH MICRO INDUCTOR 220UH MICRO INDUCTOR 270UH MICRO INDUCTOR 220UH	
CP(	022 100	1-232-934-11 1-232-927-11	COMPOSITION C	IRCUIT BLOCK			L007 L010 L013	1-408-424-00	MICRO INDUCTOR 82UH MICRO INDUCTOR 180UH MICRO INDUCTOR 150UH	
		TRIM					L014 L017	1-408-422-00	MICRO INDUCTOR 120UH MICRO INDUCTOR 330UH	
CV2	200	1-141-227-00	CAP, CERAMIC	TRIMMER			2017	1-700-427-00	MICKO INDUCTOR 3300H	

Ref.No Part No.	Description	Remark	Ref.No	Part No.	Description				Remark
L018 1-408-422-00 L019 1-408-423-00 L020 1-408-416-00 L021 1-410-072-21 L022 1-408-421-00	MICRO INDUCTOR 120UH MICRO INDUCTOR 150UH MICRO INDUCTOR 39UH MICRO INDUCTOR 820UH MICRO INDUCTOR 100UH MICRO INDUCTOR 1UH		Q103 Q104 Q105 Q107 Q108	8-729-245-83 8-729-245-83 8-729-245-83 8-729-900-36 8-729-900-36	TRANSISTOR TRANSISTOR TRANSISTOR	2SC2458 2SC2458 DTC124ES			
1-408-418-00 1104 1-408-420-00 1105 1-408-418-00 1106 1-408-421-00	MICRO INDUCTOR 56UH MICRO INDUCTOR 82UH MICRO INDUCTOR 56UH MICRO INDUCTOR 100UH		Q109 Q110 Q200 Q201 Q203	8-729-900-36 8-729-245-83 8-729-245-83 8-729-900-36 8-729-603-50	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	2SC2458 2SC2458 DTC124ES 2SC403SP			
L108 1-408-413-00 L109 1-408-408-00 L110 1-408-412-00 L111 1-408-413-00	MICRO INDUCTOR 68UH  MICRO INDUCTOR 22UH  MICRO INDUCTOR 8.2UH  MICRO INDUCTOR 18UH  MICRO INDUCTOR 22UH  MICRO INDUCTOR 56UH		Q204 Q205 Q206 Q207 Q208	8-729-603-50 8-729-900-36 8-729-117-54 8-729-900-36 8-729-245-83	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	DTC124ES 2SA1175- DTC124ES 2SC2458	F		
L114 1-408-417-00 L115 1-408-417-00 L116 1-408-414-00 L200 1-408-424-00	MICRO INDUCTOR 47UH MICRO INDUCTOR 47UH MICRO INDUCTOR 27UH MICRO INDUCTOR 180UH MICRO INDUCTOR 22UH		Q209 Q212 Q213 Q214 Q215	8-729-245-83 8-729-245-83 8-729-900-36 8-729-900-36 8-729-245-83	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	2SC2458 DTC124ES DTC124ES 2SC2458			
L203 1-408-427-00 L206 1-408-425-00 L207 1-408-420-00 L208 1-408-407-00	MICRO INDUCTOR 330UH MICRO INDUCTOR 220UH MICRO INDUCTOR 82UH MICRO INDUCTOR 6.8UH MICRO INDUCTOR 330UH		Q217 Q218 Q258 Q300	8-729-245-83 8-729-900-61 8-729-900-36 8-729-900-36	TRANSISTOR TRANSISTOR TRANSISTOR	2SC2458 DTA114ES DTC124ES			
VAR	TABLE COIL		R001	1-247-881-00		120K	5%	1/6W	
LV001 1-409-397-11 LV100 1-408-512-00	TRAP COIL (VARIABLE)		R002 R003 R004 R005	1-247-895-00 1-247-857-00 1-247-859-00 1-249-437-11	CARBON CARBON CARBON	470K 12K 15K 47K		1/6W 1/6W 1/6W 1/6W	
	LINK	İ	R006	1-249-437-11		47K	5%	1/6W	
PS200 <u></u> 1-532-679-00	LINK, IC (ICP-N15) NSISTOR		R007 R008	1-249-417-11 1-247-891-00	CARBON CARBON	1K 330K	5%	1/6W 1/6W	
	NSISTOR		R010 R011	1-249-417-11 1-249-441-11		1K 100K	5% 5%	1/6W 1/6W	
0004 8-729-117-54 0007 8-729-117-54 0008 8-729-384-48	TRANSISTOR 2SA1175 TRANSISTOR 2SA1175 TRANSISTOR 2SA1175 TRANSISTOR 2SA844 TRANSISTOR 2SC2458 TRANSISTOR 2SC2458 TRANSISTOR DTC124ES TRANSISTOR 2SA1175		R014 R015	1-247-875-00 1-249-417-11 1-249-437-11 1-249-437-11	CARBON CARBON CARBON	68K 1K 47K 47K	5% 5% 5%	1/6W 1/5W 1/6W 1/6W	
Q011 8-729-900-36	TRANSISTOR 2SC2458 TRANSISTOR DTC124ES TRANSISTOR 2SA1175 TRANSISTOR 2SA1175 TRANSISTOR DTC124ES	and the second s	R019 R020	1-247-873-00 1-249-425-11 1-249-425-11 1-247-833-00	CARBON CARBON CARBON CARBON	47K 56K 4.7K 4.7K 1.2K	5% 5%	1/6W 1/6W	
0015 8-729-900-36 0016 8-729-245-83 0017 8-729-900-36 0021 8-729-900-89 0100 8-729-900-36	TRANSISTOR DTC124ES TRANSISTOR 2SC2458 TRANSISTOR DTC124ES TRANSISTOR DTC144ES TRANSISTOR DTC124ES		R022 R024 R025 R026 R027	1-249-437-11 1-249-437-11 1-249-437-11 1-249-437-11 1-249-437-11	CARBON CARBON CARBON CARBON CARBON	22K 47K 47K 47K 47K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
0101 8-729-900-36 0102 8-729-117-54	TRANSISTOR DTC124ES TRANSISTOR 2SA1175		R029 R030	1-247-839-00 1-249-422-11	CARBON CARBON	2.2K 2.7K	5% 5%	1/6W 1/6W	

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

											_		
Ref.N	lo Part No.	Description				Remark	, Ref.No	Part No.	Description				Remark
R031	1-247-839-00	CADDON		F~	2.4514		21.45		*******				
RO32	1-247-845-00		3.9K	5% 5%	1/6W		R145	1-247-839-00	CARBON	2.2		1/6W	
RO33	1-247-883-00		150K		1/6W 1/6W		R146 R147	1-249-417-11	CARBON	1K	5%	1/6W	
RO37	1-247-853-00		8.2K		1/6W		R151	1-249-417-11 1-249-419-11	CARBON CARBON	1K	5%	1/6W	
RO40	1-247-823-00		470	5%	1/6W		R155	1-249-437-11	CARBON	1.5K 47K		1/6W	
110 10	1-247-025-00	CARDON	470	3,6	1/0#		K133	1-249-43/-11	CARBON	4/K	5%	1/6W	
RO42	1-249-417-11	CARBON	1K	5%	1/6W		R156	1-247-875-00	CARBON	68K	5%	1/6W	
RO43	1-249-433-11		22K	5%	1/6W		R159	1-249-414-11	CARBON	560	5%	1/6W	
RO45	1-247-829-00		820	5%	1/6W		R161	1-247-823-00	CARBON	470	5%	1/6W	
RO50	1-247-839-00		2.2K		1/6W		R164	1-249-415-11	CARBON	680	5%	1/6W	
RO51	1-247-839-00	CARBON	2.2K	5%	1/6W		R165	1-249-425-11	CARBON	4.7K		1/6W	
												-,	
RO52	1-249-422-11	CARBON	2.7K	5%	1/6W		R168	1-249-425-11	CARBON	4.7K	5%	1/6W	
RO54	1-247-837-00		1.8K		1/6W		R173	1-247-815-00	CARBON	220	5%	1/6W	
RO55	1-247-804-00		75	5%	1/6W		R175	1-249-415-11	CARBON	680	5%	1/6W	
RO56	1-247-797-00		39	5%	1/6W		R176	1-249-415-11	CARBON	680	5%	1/6W	
RO57	1-247-797-00	CARBON	39	5%	1/6W		R178	1-249-417-11	CARBON	1K	5%	1/6W	
RO58	1 240 414 11	CADDON	5.00		1.4614		0170	1 047 005 00		4200			
RO59	1-249-414-11 1-247-845-00		560	5%	1/6W		R179	1-247-895-00	CARBON	470K		1/6W	
RO60	1-247-821-00	-	3.9K		1/6W		R180	1-249-434-11	CARBON	27K	5%	1/6W	
RO63	1-247-821-00		390 <b>390</b>	5% 5%	1/6W 1/6W		R181 R182	1-249-417-11 1-249-429-11	CARBON CARBON	1K	5%	1/6W	
RO 64	1-247-857-00	CARBON	12K	5%	1/6W		R183	1-249-432-11	CARBON	10K 18K	5% 5%	1/6W	
RO65	1-249-414-11		560	5%	1/6W		1100	1-243-432-11	CARDON	101	3,6	1/6W	
		0.11.2011	300	J.8	1/01	1	R184	1-249-441-11	CARBON	100K	5%	1/6W	
RO66	1-249-415-11	CARBON	680	5%	1/6W		R185	1-249-422-11	CARBON	2.7K		1/6W	
RO67	1-247-805-00	CARBON	82	5%	1/6W		R186	1-247-859-00	CARBON	15K	5%	1/6W	
RO69	1-247-829-00	CARBON	820	5%	1/6W	1	R187	1-249-435-11	CARBON	33K	5%	1/6W	
RO70	1-247-883-00	CARBON	150K	5%	1/6W		R190	1-249-432-11	CARBON	18K	5%	1/6W	
RO72	1-247-815-00	CARBON	220	5%	1/6W								
							R200	1-249-435-11	CARBON	33K	5%	1/6W	
RO73	1-249-425-11	CARBON	4.7K	5%	1/6W		R201	1-247-823-00	CARBON	470	5%	1/6W	
RO 74	1-249-425-11	CARBON	4.7K	5%	1/6W	!	R203	1-249-422-11	CARBON	2.7K	5%	1/6W	
RO75 RO77	1-249-423-11	CARBON	3.3K	5%	1/6W	i	R209	1-249-417-11	CARBON	1K	5%	1/6W	
RO79	1-249-414-11	CARBON	680	5%	1/6W	İ	R218	1-249-405-11	CARBON	100	5%	1/6W	
1079	1-249-417-11	CARBON	1K	5%	1/6W		0010	1 047 000 00	CARRON				
R080	1-249-429-11	CARBON	104	Ear	1/61/	!	R219	1-247-839-00	CARBON	2.2K	5%	1/6W	
R084	1-247-815-00	CARBON	10K 220	5% 5%	1/6W	i	R220 R221	1-249-417-11	CARBON	1K	5%	1/6W	
R085	1-249-433-11	CARBON	22K	5%	1/6W 1/6W	i	R222	1-249-417-11 1-247-859-00	CARBON CARBON	1K	5%	1/6W	
R086	1-247-853-00	CARBON	8.2K	5%	1/6W	i	R223	1-249-415-11	CARBON	15K 680	5% 5%	1/6W	
R087	1-249-432-11	CARBON	18K	5%	1/6W		KLLJ	1-249-415-11	CARDON	000	36	1/6W	
			• • • • • • • • • • • • • • • • • • • •	5,6	1/011	i	R224	1-247-859-00	CARBON	15K	5%	1/6W	
R101	1-247-809-00	CARBON	120	5%	1/6W	1	R225	1-249-425-11	CARBON	4.7K	5%	1/6W	
R102	1-247-857-00	CARBON	12K	5%	1/6W		R226	1-249-433-11	CARBON	22K	5%	1/6W	
R103	1-249-433-11	CARBON	22K	5%	1/6W	1	R227	1-247-839-00	CARBON	2.2K	5%	1/6W	
R104	1-249-433-11	CARBON	22K	5%	1/6W		R232	1-249-433-11	CARBON	22K	5%	1/6W	
R105	1-247-895-00	CARBON	470K	5%	1/6W							*	
D106	1 047 002 00	010000					R233	1-249-441-11	CARBON	100K	5%	1/6W	
R106 R107	1-247-903-00	CARBON	111	5%	1/6W			1-247-851-00	CARBON	6.8K	5%	1/6W	,
R108	1-249-405-11 1-249-429-11	CARBON	100	5%	1/6W	Į	R235	1-247-839-00	CARBON	2.2K	5%	1/6W	
R110	1-247-869-00	CARBON CARBON	10K 39K	5% 5%	1/6W		D226	1 240 427 **	CADDON		E.c.		
R111	1-247-859-00	CARBON	15K	5%	1/6W			1-249-437-11	CARBON	47K	5%	1/6W	
	000-00	Jrinar Oli	701	J /6	1/6W	1		1-249-437-11 1-249-425-11	CARBON	47K	5%	1/6W	
R113	1-247-833-00	CARBON	1.2K	5%	1/6₩	!		1-249-425-11	CARBON CARBON	4.7K	5% 5%	1/6W	
R114	1-249-425-11	CARBON	4.7K		1/6W			1-249-425-11	CARBON	1K 4.7K	5%	1/6W 1/6W	
R122	1-249-417-11	CARBON	1K	5%	1/6W	- 1			CARDON	7./	J /6	1/0#	
R125	1-249-419-11	CARBON	1.5K	5%	1/6W		R248	1-247-885-00	CARBON	180K	5%	1/6W	
R131	1-249-417-11	CARBON	1K	5%	1/6W			1-249-429-11	CARBON	10K	5%	1/6W	
012-						1	R253	1-249-425-11	CARBON	4.7K		1/6W	
R132	1-247-823-00	CARBON	470	5%	1/6W		R254	1-249-437-11	CARBON	47K	5%	1/6W	
R133 R134	1-249-417-11	CARBON	1K	5%	1/6W	1							
1134	1-247-809-00	CARBON	120	5%	1/6W				CARBON	1K	5%	1/6W	
R135	1-247-821-00	CARRON	200	Ear	1 (6)				CARBON	2.7K	5%	1/6W	
R136	1-247-821-00	CARBON CARBON	390	5%	1/6W			1-249-417-11	CARBON	1K	5%	1/6W	
R137	1-247-809-00	CARBON	120 270	5% 5%	1/6W				CARBON	470	5%	1/6W	
R138	1-249-437-11	CARBON	47K	5% 5%	1/6W		R266	1-249-405-11	CARBON	100	5%	1/6W	
R139	1-249-437-11	CARBON	47K	5%	1/6W 1/6W		R267	1_2/0_/15 11	CARRON	500	c~	1/64	
		J. 1112411			1/04				CARBON CARBON	680	5%	1/6W	
R140	1-249-417-11	CARBON	1K	5%	1/6W				CARBON	33K	5% 5*	1/6W	
R141	1-247-849-00	CARBON		5%	1/6W				CARBON	22K 1K	5% 5%	1/6W 1/6W	
R142		CARBON		5%	1/6W				CARBON	4.7K		1/6W	
R143	1-249-405-11	CARBON		5%	1/6W					101K	J,	2,011	
R144	1-247-791-00	CARBON	22	5%	1/6W								

## VI-9AG SK-9 NC-5

Ref.No Part No.	Description				Remark	Ref.No	Part No.	Descriptio	<u>n</u> .			Remark
R272 1-247-849-00 R273 1-249-435-11	CARBON CARBON	5.6K 33K	5%	1/6W 1/6W		V100		STAL	CDVCTAL		٠.	
R274 1-249-425-11 R277 1-249-437-11 R280 1-247-829-00	CARBON CARBON CARBON	4.7K 47K 820	5% 5% 5%	1/6W 1/6W 1/6W	9	X100 X200 X201	1-567-442-11 1-567-146-11 1-567-345-11	VIBRATOR,	CRYSTAL			
R282 1-249-433-11	CARBON	22K	5%	1/6W		****	*****	******	*****	****	*****	******
R284 1-249-417-11 R285 1-249-422-11 R286 1-247-815-00	CARBON CARBON CARBON	1K 2.7K 220	5% 5% 5%	1/6W 1/6W 1/6W			*1-617-208-11	SK-9 BOARD				
R287 1-249-417-11	CARBON	1K	5%	1/6W			CAP	ACITOR				
R288 1-249-417-11 R289 1-249-417-11 R290 1-247-840-00	CARBON CARBON CARBON	1K 1K 2.4K	5% 5% 5%	1/6W 1/6W 1/6W		C601 C602	1-161-025-00 1-161-023-00	CERAMIC CERAMIC	0.1MF 0.068M	IF	10% 10%	25V 25V
R292 1-249-425-11 R293 1-249-417-11	CARBON CARBON	4.7K 1K	5% 5%	1/6W			TRA	NSISTOR				
R300 1-247-887-00 R301 1-249-437-11	CARBON CARBON	220K 47K	5% 5%	1/6W 1/6W 1/6W		Q111 Q401	8-729-900-36 8-729-900-89	TRANSISTOR TRANSISTOR	DTC144ES			
R302 1-249-437-11	CARBON	47K	5%	1/6W		Q402	8-729-178-54	TRANSISTOR	2502785-	F		
R303 1-247-887-00 R304 1-249-437-11	CARBON CARBON	220K 47K	5% 5%	1/6W 1/6W			RES	ISTOR				
R305 1-249-437-11 R306 1-249-415-11	CARBON CARBON	47K 680	5% 5%	1/6W 1/6W		R600 R601	1-249-417-11 1-249-425-11	CARBON	1K 4.7K		.1/6W 1/6W	
R307 1-249-415-11 R309 1-247-783-00 R310 1-249-417-11		680 10 1K	5% 5% 5%	1/6W 1/6W 1/6W		*****	********** *1-619-504-11	**************************************	)	****	*****	*****
R311 <u>↑</u> 1-249-417-11	CARBON	1K	5%	1/6W			CAP	ACITOR				
R312 1-247-873-00 R501 1-249-417-11	CARBON CARBON	56K 1K	5% 5%	1/6W 1/6W		C001	1-124-225-00		100MF		20%	6.3V
R750 1-247-839-00 R751 1-247-821-00	CARBON CARBON	2.2K 390	5% 5%	1/6W 1/6W		C002 C003	1-102-980-00 1-102-961-00	CERAMIC CERAMIC	270PF		5%	50V
R752 1-247-805-00	CARBON	82	5%	1/6W		C004	1-124-245-00	ELECT	27PF 4.7MF		5% 20%	50V 16V
R753 1-247-839-00	CARBON	2.2K	5%	1/6W		C005	1-124-233-00	ELECT	10MF		20%	167
R754 1-249-414-11	CARBON	560	5%	1/6W		C006	1-161-059-00	CERAMIC	0.047	1F	10%	250
R755 1-247-839-00 R756 1-247-839-00	CARBON CARBON	2.2K 470	5% 5%	1/6W 1/6W			COI	<u>L</u>				
R757 1-249-429-11 R758 1-247-874-00	CARBON CARBON	10K 62K	5% 5%	1/6W 1/6W		L001	1-408-984-21	MICRO INDU	CTOR 150U	JH		
R759 1-247-821-00	CARBON	390	5%	1/6W			TRA	NSISTOR				
R760 1-249-417-11 R761 1-249-432-11	CARBON CARBON	1K	5% 5%	1/6W		0001	8-729-245-83	TRANSISTOR				
R762 1-249-417-11	CARBON	1K	5%	1/6W 1/6W		Q002 Q003	8-729-245-83 8-729-245-83	TRANSISTOR TRANSISTOR				
R765 1-249-433-11	CARBON		5%	1/6W			RES	ISTOR				
R(C242) 1 -247 -815-00 R(L77) 1 -247-811-00			5% 5%	1/6W 1/6W		R001	1-249-417-11	CARBON	1K	5%	1/6W	
VAD	TABLE DESISTAN			•		R002 R003	1-249-405-11 1-247-839-00	CARBON CARBON	100	5%	1/6W	
	IABLE RESISTOR					R004	1-247-838-00	CARBON	2.2K 2K	5% 5%	1/6W 1/6W	
RV001 1-228-995-00 RV002 1-228-993-00	RES, ADJ, CARE					R005	1-247-833-00	CARBON	1.2K	5%	1/6W	
RV003 1-228-995-00 RV004 1-228-994-00	RES, ADJ, CARE					R006 R007	1-247-833-00 1-247-817-00	CARBON CARBON	1.2K 270	5% 5%	1/6W 1/6W	
RV005 1-228-995-00	RES, ADJ, CARE					<b>★</b> R008	(1-249-417-11 1-249-433-11	CARBON CARBON	1 K 22 K	5% 5%	1/6W)	
RV006 1-228-995-00 RV100 1-228-995-00	RES, ADJ, CARE					R009	1-247-857-00	CARBON	12K	5%	1/6W 1/6W	
RV100 1-228-995-00 RV101 1-228-996-00 RV102 1-228-998-00	RES, ADJ, CARE	30N 47K			•	R010	1-249-423-11	CARBON	3.3K	5%	1/6W	
RV103 1-228-997-00	RES, ADJ, CARE		K			*	R007 is an ac	_				
RV201 1-228-990-00 RV202 1-228-995-00	RES, ADJ, CARE	ON 22K					placed by occa the same const				_	
RV203 1-228-989-00 RV204 1-228-994-00	RES, ADJ, CARE						installed.					
RV205 1-228-994-00	RES, ADJ, CARB				9750000							r
RV206 1-228-995-00	RES, ADJ, CARE				The	compo	nents identified	by				

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

## SS-38F/G

Ref.No Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
*A-7060-156-A *A-7060-163-A	SS-38F BOARI SS-38G BOARI ************************************	, COMPLETE	(UK MOD	EL)	C306 C307 C308 C309 C310	1-102-905-00 1-124-271-00 1-161-055-00 1-123-330-00 1-123-330-00	CERAMIC ELECT CERAMIC ELECT ELECT	130PF 1MF 0.022MF 22MF 22MF	5% 20% 10% 20% 20%	50V 50V 25V 16V 16V
Ort	MOTTON									
C001 1-130-489-00 C004 1-123-356-00 C005 1-123-380-00 C006 1-123-380-00 C010 1-161-013-00	ELECT ELECT ELECT	0.033MF 10MF 1MF 1MF 0.01MF	5% 20% 20% 20% 10%	50V 16V 50V 50V 25V	C311 C320 C321 C322 C333	1-123-330-00 1-123-330-00 1-161-055-00 1-123-330-00 1-161-055-00	ELECT ELECT CERAMIC ELECT CERAMIC	22MF 22MF 0.022MF 22MF 0.022MF	20% 20% 10% 20% 10%	16V 16V 25V 16V 25V
C098 1-162-306-31 C099 1-162-306-31 C102 1-161-055-00 C103 1-161-013-00 C105 1-161-013-00	CERAMIC CERAMIC CERAMIC	0.01MF 0.01MF 0.022MF 0.01MF 0.01MF	20% 20% 10% 10% 10%	16 V 16 V 25 V 25 V 25 V	C350 C401 C402 C501 C502	1-124-271-00 1-161-013-00 1-161-013-00 1-130-475-00 1-130-475-00	CERAMIC CERAMIC	1MF 0.01MF 0.01MF 0.0022MF 0.0022MF	20% 10% 10% 5% 5%	50 V 25 V 25 V 50 V 50 V
C106 1-161-013-00	CERAMIC	0.01MF	10%	25 V		CON	INECTOR			
C107 1-101-880-00 C108 1-101-880-00 C109 1-161-043-00	CERAMIC CERAMIC	47PF 47PF 0.0022MF	5% 5% 10%	50V 50V 25V	CN102	*1-560-895-00 *1-560-900-00	PIN, CONNEC PIN, CONNEC	TOR 12P		
C110 1-125-373-11 C111 1-161-025-00	CERAMIC	0.1MF	10%	5.5V 25V	CN105	*1-560-893-00 *1-560-897-00 *1-560-897-00	PIN, CONNEC PIN, CONNEC PIN, CONNEC	TOR 9P		
C112 1-123-356-00		10MF 0.1MF	20% 10%	16V 25V	CN1.07	*1-560-895-00	PIN. CONNEC	TOR 7P		
C113 1-161-025-00 C114 1-123-379-00		0.47MF	20%	50V		*1-560-893-00	PIN. CONNEC			
C115 1-123-379-00	ELECT	0.47MF 0.01MF	20%	50V 25V	CN110	*1-560-898-00 *1-560-900-00 *1-560-890-00	PIN, CONNEC PIN, CONNEC PIN, CONNEC	TOR 12P		
C116 1-161-013-00 C117 1-123-380-00		1MF	20%	50V	CHIIS	1-300-030-00	Tin, come	70.1 2.		
C118 1-161-059-00		0.047MF	10%	25 V		*1-560-895-00	PIN, CONNEC			
C121 1-161-013-00 C122 1-102-973-00		0.01MF 100PF	10% 5%	25 V 50 V	CN201	*1-560-894-00 *1-560-895-00 *1-560-894-00	PIN, CONNEC PIN, CONNEC PIN, CONNEC	TOR 7P TOR 6P		
C123 1-131-343-00 C131 1-119-353-00 C136 1-161-059-00	ELECT	0.22MF 220MF 0.047MF	20%	35 V 10 V 25 V		*1-560-892-00 *1-560-891-00	PIN, CONNEC			
C138 1-161-013-00 C190 1-102-973-00	CERAMIC	0.01MF 100PF	10% 5%	25 V 50 V		*1-560-890-00	PIN, CONNEC	TOR 2P		
0101 1 100 072 00	CEDAMIC	10005	5%	50V		CUN	POSITION CIR	COLL BLOCK		
C191 1-102-973-00 C201 1-130-481-00 C202 1-124-271-00 C203 1-102-973-00 C209 1-161-013-00	MYLAR ELECT CERAMIC	100PF 0.0068MF 1MF 100PF 0.01MF	5% 20% 5% 10%	50V 50V 50V 50V 25V	CP009 CP010 CP011	1-232-789-11 1-232-787-11 1-232-790-11 1-232-845-11 1-232-786-11	COMPOSITION COMPOSITION COMPOSITION	CIRCUIT BLO CIRCUIT BLO CIRCUIT BLO CIRCUIT BLO CIRCUIT BLO	ICK ICK ICK	
C218 1-123-356-00	ELECT	10MF	20%	16V	CPUIZ	1-232-700-11	COMEOSTITON	OINCOI! BLC	- CR	
C219 1-161-057-00		0.033MF	10%	25 V		1-232-851-11		CIRCUIT BLO		1
C220 1-161-047-00		0.0047MF	10%	25 V		1-232-841-11		CIRCUIT BLO		
C231 1-124-268-00 C233 1-124-275-00		0.22MF 2.2MF	20% 20%	50V 35V		1-232-852-11 1-232-846-12 1-232-842-11	COMPOSITION	CIRCUIT BLO CIRCUIT BLO CIRCUIT BLO	CK	
C234 1-161-059-00		0.047MF	10%	25 V	CDOSS	1-232-924-11	COMPOSITION	CIRCUIT BLO	ורג	
C241 1-124-282-00 C299 1-123-356-00		22MF 10MF	20% 20%	25V 16V	CP023			CIRCUIT BLO		
C299 1-123-356-00 C301 1-102-517-00	CERAMIC	30PF	5%	50V	CP028	1-232-923-11	COMPOSITION	CIRCUIT BLO	CK	
C302 1-102-531-00		150PF	5%	50V	CP029 CP030	1-232-844-11 1-232-782-11		CIRCUIT BLO		
C303 1-102-905-00	CERAMIC	130PF	5%	50V						
C304 1-102-905-00	CERAMIC	130PF	5% 5%	50V	CP031	1-232-925-11		CIRCUIT BLO		
C305 1-102-905-00	CERAMIC	130PF	5%	50 V	L LP032	1-232-930-11	COMPUSTITON	CIRCUIT BLO	JCK.	

## SS-38F/G

Ref.N	lo Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
CP033	1-232-926-11	COMPOSITION CIRCUIT BLOCK		10402	8-759-045-38	IC MC14538BCP	
				IC404	8-759-240-66	IC TC4066BP	
	DI	ODE		IC501	8-759-045-38	IC MC14538BCP	
D004	8-719-911-19	DIODE 1SS119			10	CV	
D005	8-719-000-06	DIODE MC921			JA		
D102 D104	8-719-000-06 8-719-000-12			J118	1-507-562-00	JACK (CONTROL S IN)	
D104		DIODE MC931 DIODE MC931					
					<u>CO</u>	<u>IL</u>	
D108 D109	8-719-101-32			L101	1-407-169-XX	MICRO INDUCTOR 100UH	
D113	8-719-000-06 8-719-113-07			L601	1-408-411-00	MICRO INDUCTOR 15UH (AEP MODEL	)
D150	8-719-100-38	DIODE RD6.2EB2			ıc	LINK	
D151	8-719-100-38	DIODE RD6.2EB2					
D204	8-719-000-12	DIODE MC931		PS1 00/	1-532-605-11	LINK, IC (ICP-N10)	
D301	8-719-911-19	DIODE 1SS119		PS1 02/	1-532-605-11	LINK, IC (ICP-NTO) LINK, IC (ICP-NTO) LINK, IC (ICP-NTO)	
D302 D305		DIODE 1SS119		5.1			Salara,
D305	8-719-911-19	DIODE 1SS119 DIODE 1SS119			TRA	ANSISTOR	
				0001	8-729-900-33	TRANSISTOR DTC144EF	•
D308 D309	8-719-911-19	DIODE 188119		0003	8-729-245-83	TRANSISTOR 2SC2458	
D310		DIODE 1SS119 DIODE 1SS119		Q009 Q010	8-729-900-89	TRANSISTOR DTC144ES	
D311	8-719-911-19	DIODE 1SS119		0101	8-729-177-32	TRANSISTOR DTC144ES TRANSISTOR 2SD773	
D411 D501	8-719-000-06		i				
0201	8-719-911-19	DIODE 1SS119		Q103 Q104	8-729-900-89	TRANSISTOR DTC144ES	
D502	8-719-911-19	DIODE 1SS119		0105	8-729-245-83	TRANSISTOR 2SC2458 TRANSISTOR 2SC2458	
	F.11	TED		0106	8-729-245-83	TRANSISTOR 2SC2458	
	FIL	TER		Q107	8-729-204-83	TRANSISTOR 2SA1048-GR	
	1-235-396-21			Q111	8-729-900-63	TRANSISTOR DTA124ES	
FL302	1-235-395-21	BPF		0112	8-729-900-80	TRANSISTOR DTC114ES	
	10			Q113 Q114	8-729-900-63	TRANSISTOR DTA124ES TRANSISTOR 2SC2458	
				0116	8-729-245-83	TRANSISTOR 2SC2458	
10101	8-/59-913-87 8-752-320-11	IC MB88551-159N					
IC103	8-759-913-67	IC MB3763P		Q117 Q118	8-729-245-83	TRANSISTOR 2SC2458 TRANSISTOR 2SC2458	
IC104	8-759-913-67	IC MB3763P		0122	8-729-900-89	TRANSISTOR DTC144ES	
10105	8-759-240-30	IC TC4030BP	1	Q130	8-729-900-80	TRANSISTOR DTC114ES	
IC107	8-759-103-93	IC UPC393C		Q131	8-729-900-36	TRANSISTOR DTC124ES	
IC108	8-759-200-07	IC TC40H157P		Q135	8-729-245-83	TRANSISTOR 2SC2458	
10110	8-759-602-64 8-759-240-11	IC M50761-692P	ŀ	0137	8-729-900-89	TRANSISTOR DTC144ES	
ICIII	8-759-045-38	IC MC14538BCP			8-729-245-83 8-729-900-89	TRANSISTOR 2SC2458 TRANSISTOR DTC144ES	
					8-729-245-83	TRANSISTOR 2SC2458	
10112	8-759-700-81 8-752-013-50			0000			
IC202	8-759-200-56	IC CX20135 IC TC4526BP			8-729-245-83 8-729-204-83	TRANSISTOR 2SC2458 TRANSISTOR 2SA1048-GR	
IC203	8-759-135-80	IC UPC358C			8-729-245-83	TRANSISTOR 2SC2458	
IC204	8-759-240-66	IC TC4066BP			8-729-204-83	TRANSISTOR 2SA1048-GR	
IC301	8-752-203-20	IC CX22032		Q206	8-729-204-83	TRANSISTOR 2SA1048-GR	
10302	1-807-153-11	IC (DIFFERENTIAL DETECTOR)			8-729-900-89	TRANSISTOR DTC144ES	
IC303 IC304	8-759-602-76 8-759-940-94	IC M50763-633SP IC MSM4094RS				TRANSISTOR DTA144ES	
IC305		IC TC40H157P				TRANSISTOR DTA144ES TRANSISTOR DTC144ES	
10206						TRANSISTOR DTC144ES	
IC306 IC401		IC TC4053BP IC UPC358C	Ţ				
	2 100 100-00	10 010000					

The components identified by shading and mark  $\Lambda$  are critical for safety. Replace only with part number specified.

## SS-38F/G

	Ref.No	Part No.	Description	1			Remark	Ref.No	Part No.	Description				Remark
	- KCT - KO	10.0		-					. 047 001 00	CADDON	1K	5%	1/6W	
	0215	8-729-900-65	TRANSISTOR	DTA144ES				R186	1-247-831-00	CARBON	1K		1/6W	
	0219	8-729-900-89	TRANSISTOR	DTC144ES				R187	1-247-831-00	CARBON			1/6W	
	0221	8-729-900-89	TRANSISTOR	DTC144ES				R188	1-247-831-00	CARBON	1K		1/6W	
	0301	8-729-115-30	TRANSISTOR	2SK105A				R189	1-247-831-00	CARBON	1K			
•	0302	8-729-115-30	TRANSISTOR	2SK105A				R190	1-247-831-00	CARBON	1K	5%	1/6W	
	400-										2.44	EN	1 / (1)	
	0303	8-729-115-30	TRANSISTOR	2SK105A				R191	1-247-831-00	CARBON	1K		1/6W	
	0304	8-729-115-30	TRANSISTOR	2SK105A				R192	1-247-831-00	CARBON	1 K		1/6W	
	0307	8-729-115-30	TRANSISTOR	2SK105A				R193	1-247-831-00	CARBON	1K		1/6W	
	0401	8-729-900-89	TRANSISTOR	DTC144ES				R194	1-247-831-00	CARBON	1K		1/6W	
	0402	8-729-900-89	TRANSISTOR					R202	1-247-843-00	CARBON	3.3K	5%	1/6W	
	Q40E	0-725 300 05	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,											
		RES	ISTOR					R203	1-249-434-11	CARBON	27K		1/6W	
								R206	1-247-853-00	CARBON	8.2K		1/6W	
	R002	1-249-429-11	CARBON	10K	5%	1/6W		R207	1-247-849-00	CARBON	5.6K	5%	1/6W	
	R003	1-247-895-00	CARBON	470K	5%	1/6W		R208	1-247-849-00	CARBON	5.6K	5%	1/6W	
	R008	1-247-847-00	CARBON	4.7K	5%	1/6W		R209	1-247-863-00	CARBON	22K	5%	1/6W	
		1-249-441-11	CARBON	1 00K	5%	1/6W								
	R009		CARBON	1K	5%	1/6W		R210	1-247-873-00	CARBON	56K	5%	1/6W	
	R010	1-247-831-00	CARBON	680K	5%	1/6W		R211	1-247-869-00	CARBON	39K	5%	1/6W	
	RO28	1-247-899-00	CARBUN	OOOK	3.6	1, 011		R212	1-247-867-00	CARBON	33K	5%	1/6W	
				9.14	E 04	1/611		R213	1-247-843-00	CARBON	3.3K	5%	1/6W	
	RO99	1-247-831-00	CARBON	1K	5%	1/6W		R214	1-247-861-00	CARBON	18K	5%	1/6W	
	R100	1-249-429-11	CARBON	10K	5%	1/6W								
	R1 01	1-249-437-11	CARBON	47K	5%	1/6W		R232	1-247-869-00	CARBON	39K	5%	1/6W	
	R1 02	1-247-859-00	CARBON	15K	5%	1/6W		R235	1-249-434-11	CARBON	27 K	5%	1/6W	
	R103	1-247-853-00	CARBON	8.2K	5%	1/6W		R236	1-247-879-00	CARBON	100K	5%	1/6W	
						4.4614		R242	1-247-879-00	CARBON	100K	5%	1/6W	
	R1 04	1-247-847-00	CARBON	4.7K	5%	1/6W		R243	1-249-429-11	CARBON	10K	5%	1/6W	
	R1 05	1-247-843-00	CARBON	3.3K	5%	1/6W		11273	1 210 120 11	•				
	R106	1-249-421-11	CARBON	2.2K	5%	1/6W		R246	1-249-437-11	CARBON	47K	5%	1/6W	
	R107	1-247-837-00	CARBON	1.8K	5%	1/6W		R260	1-249-429-11	CARBON	10K	5%	1/6W	
	R108	1-247-857-00	CARBON	12K	5%	1/6W		R272	1-249-437-11	CARBON	47 K	5%	1/6W	
									1-249-429-11	CARBON	10K	5%	1/6W	
	R1 09	1-247-831-00	CARBON	1K	5%	1/6W		R275	1-247-849-00	CARBON	5.6K	5%	1/6W	
	R110	1-249-429-11	CARBON	10K	5%	1/6W		R280	1-24/-043-00	CARDON	0.01	• **	-,	
	R119	1-249-429-11	CARBON	10K	5%	1/6W		D204	1-247-847-00	CARBON	4.7K	5%	1/6W	
	R120	1-247-823-00	CARBON	470	5%	1/6W		R284 R285	1-247-899-00	CARBON	680K	5%	1/6₩	
	R1 21	1-249-429-11	CARBON	10K	5%	1/6W			1-249-437-11	CARBON	47K	5%	1/6W	
								R286	1-247-845-00	CARBON	3.9K	5%	1/64	
	R130	1-249-437-11	CARBON	47K	5%	1/6W		R294	1-247-859-00	CARBON	15K	5%	1/64	
	R131	1-247-831-00	CARBON	1K	5%	1/6W		R295	1-247-033-00	CARDON	2310		-,	
	R132	1-247-831-00	CARBON	1K	5%	1/6W		0201	1-249-437-11	CARBON	47K	5%	1/64	
	R135	1-247-843-00	CARBON	3.3K	5%	1/6W		R301	1-249-429-11	CARBON	10K	5%	1/6	
	R136	1-249-429-11	CARBON	10K	5%	1/6W		R302		CARBON	10K	5%	1/6%	
								R303	1-249-429-11 1-249-437-11	CARBON	47K	5%	1/6	
	R138	1-249-429-11	CARBON	10K	5%	1/6W		R304	1-249-437-11	CARBON	10K	5%	1/6W	
	R139	1-249-429-11	CARBON	10K	5%	1/6W		R307	1-643-463-11	CULDON	101		-,,,,,,,	
	R1 45	1-247-857-00	CARBON	12K	5%	1/6W		D210	1-247-879-00	CARBON	100K	5%	1/6W	
	R155	1-247-879-00	CARBON	100K	5%	1/6W		R310	1-247-879-00		100K	5%	1/6%	
	R165	1-249-437-11	CARBON	47K	5%	1/6W		R311		CARBON	10K	5%	1/6	
	11200	• • • • • • • • • • • • • • • • • • • •						R312	1-249-429-11	CARDON	101	/AFD	MODEL	)
	R166	1-249-429-11	CARBON	10K	5%	1/6W		2212	1 247 072 00	CARBON	56K	5%	1/64	,
	R167	1-249-437-11	CARBON	47K	5%	1/6W		R313	1-247-873-00	CARDON	JUK		MODEL	)
	R168	1-249-437-11	CARBON	47K	5%	1/6W		D210	1 047 063 00	CADDON	22K	5%	1/6	,
	R169	1-249-437-11		47K	5%	1/6W		R318	1-247-863-00	CARBON	LLN	J/0	1/01	
	R172	1-249-429-11		10K	5%	1/6W			1 047 057 00	CADDON	124	5%	1/64	
	11.16							R319	1-247-857-00		12K		1/6/	
	R173	1-247-831-00	CARBON	1K	5%	1/6W		R327	1-247-891-00		330K			
	R174	1-249-437-11		47K	5%	1/6W		R328	1-247-867-00		33K	5%	1/6W	
	R174	1-247-879-00		100K		1/6W		R329	1-247-891-00		330K		1/64	
	R176	1-247-847-00		4.7K		1/6W		R350	1-247-879-00	CARBON	100K	5%	1/6W	
		1-247-831-00		1K	5%	1/6W				CADDON	224	EW	1/6/	
	R184	1-24,-031-00	Ç 3 O	•••				R351	1-247-863-00	CARBON	22K	5%	1 / 0%	
	R 185	1-247-831-00	CARBON	1K	5%	1/6W								
	to The													

## SS-38F/G TA-28A

Ref.N	lo Part No.	Description	<u>n</u>			Remark	, Ref.N	o Part No.	Description			Remark
R404 R408 R409 R410 R501 R502	1-249-437-11 1-249-437-11 1-247-893-00 1-247-895-00 1-247-863-00 1-249-429-11	CARBON CARBON CARBON CARBON		% %	1/6W 1/6W 1/6W 1/6W 1/6W		C015 C016 C017 C018 C019	1-102-125-00 1-102-125-00 1-123-318-00 1-102-529-00 1-102-937-00	CERAMIC CERAMIC ELECT CERAMIC	0.0047MF 0.0047MF 33MF 100PF 4PF	10% 10% 20% 5% 0.25PI	50V 50V 16V 50V
R503 R504 R604 R950	1-247-881-00 1-247-831-00 1-247-807-00 1-244-429-11	CARBON CARBON CARBON	120K 5 1K 5 100 5 10K 5	% % %	1/6W 1/6W 1/6W 1/6W 1/6W		C020 C021 C022 C023 C024	1-102-518-00 1-102-529-00 1-102-937-00 1-102-518-00 1-102-106-00	CERAMIC CERAMIC CERAMIC	33PF 100PF 4PF 33PF 100PF	5% 5% 0.25PF 5% 10%	50V 50V 50V 50V 50V
			<u>or</u>				C025	1-123-307-00	ELECT	10045	20%	1011
RV201 RV202 RV203 RV301 RV401	1-228-995-00 1-228-998-00 1-228-996-00	RES, ADJ, M RES, ADJ, M RES, ADJ, M	METAL GLAZE METAL GLAZE METAL GLAZE	22K 220k 47K	ζ.		C026 C027 C028 C029	1-102-760-00 1-123-369-00 1-123-379-00 1-102-125-00	CERAMIC ELECT ELECT	100MF 68PF 4.7MF 0.47MF 0.0047MF	20% 5% 20% 20% 10%	10V 50V 25V 50V 50V
RV501	1-228-997-00 1-228-997-00 1-230-660-11		ETAL GLAZE	100K 100K			C030 C031 C032 C033 C034	1-102-125-00 1-123-286-00 1-102-108-00 1-130-014-00 1-123-379-00	CERAMIC ELECT CERAMIC FILM ELECT	0.0047MF 0.33MF 150PF 470PF	10% 20% 10% 5%	50V 50V 50V 50V
	SWI	TCH					6034	1-123-3/9-00	ELECT	0.47MF	20%	50V
\$101 \$102 \$103 \$104 \$105	1-570-157-11 1-554-174-00 1-554-174-00 1-554-174-00 1-554-174-00	SWITCH, KEY SWITCH, KEY SWITCH, KEY	BOARD (SEA BOARD (TUN BOARD (TUN	IING) IING)			C035 C036 C037 C038 C039	1-102-125-00 1-123-318-00 1-101-004-00 1-101-004-00 1-102-525-00	CERAMIC ELECT CERAMIC CERAMIC CERAMIC	0.0047MF 33MF 0.01MF 0.01MF 68PF	10% 20% 5%	50V 16V 50V 50V 50V
\$109	1-570-157-11	SMITCH SLII	ne SLINE /s	TEDE	2) ( ACD	MODEL	C040	1-102-816-00	CERAMIC	120PF	5%	507
0.03			DE SEIDE (S	IEKE	J) ( AEP	MODEL)	C041 C042	1-130-072-00 1-102-125-00	FILM CERAMIC	0.022MF 0.0047MF	2% 10%	100 <b>V</b> 50V
	CRY	STAL					C043	1-106-184-00	MYLAR	0.0033MF	5%	50Y
X101 X102	1-567-346-11 1-527-965-00		CERAMIC CERAMIC				C044 C045	1-106-184-00 1-123-356-00	MYLAR ELECT	0.0033MF	5%	507
*****	******						C046	1-123-306-00	ELECT	10MF 47MF	20% 20%	16V 10V
			*******	****	*****	******	C047	1-123-306-00	ELECT	47MF	20%	100
	*A-7060-157-A	TA-28A BOARD	COMPLETE	(AE)	MODEL	2	C048 C049	1-106-184-00 1-106-184-00	MYLAR MYLAR	0.0033MF 0.0033MF	5% 5%	50V 50V
A	.1-463-577-31	TUNER, ET (E	3T-883AD)					1-123-379-00 1-123-319-51	ELECT ELECT	0.47MF 47MF	20% 20%	50V 16V
	CAP	ACITOR						1-101-004-00	CERAMIC ELECT	0.01MF 10MF	20%	50V 16V
C001	1-102-531-00	CERANIC	15005	- m				1-101-004-00	CERAMIC	0.01MF	20%	50V
C002	1-102-531-00	CERAMIC CERAMIC	150PF 120PF	5% 5%		00	C055	1-101-004-00	CEDANIC	0.0145		
C003	1-102-513-00	CERAMIC	18PF	5%		V		1-123-356-00	CERAMIC ELECT	0.01MF 10MF		50V 16V
C004 C005	1-102-518-00	CERAMIC	33PF	5%		V	C057	1-123-318-00	ELECT	33MF		167
0005	1-102-125-00	CERAMIC	0.0047MF	10	% 50	ov		1-123-379-00 1-108-579-00	ELECT	0.47MF		50V
0006 0007	1-102-125-00	CERAMIC	0.0047MF	10		v	0033	1-100-5/9-00	MYLAR	0.01MF	5%	50V
C007 C008	1-123-307-00 1-102-125-00	ELECT CERAMIC	100MF 0.0047MF	20					MYLAR	0.01MF		50V
C009	1-102-125-00	CERAMIC	0.0047MF	10 10				1-123-356-00 1-161-025-00	ELECT	10MF		16V
C010	-	CERAMIC	0.0047MF	10					CERAMIC ELECT	0.1MF 22MF		25V 16V
C011	1-123-379-00	ELECT	0.47MF	20	% 50	v			ELECT	10MF		167
C012	1-102-125-00	CERAMIC	0.0047MF	10			C066	1-123-318-00	ELECT	33MF	204	16V
		CERAMIC	0.0047MF	10	<b>%</b> 50	٧				1MF		16V 50V
C014	1-102-125-00	CERAMIC	0.0047MF	10	% 50	v i				1MF		50 V

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

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	Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description	Remark
	C069 C070	1-123-380-00 1-123-369-00 1-102-125-00	ELECT ELECT CERAMIC	1MF 4.7MF 0.0047MF	20% 20% 10%	50V 25V 50V	CF001	FIL <sup>-</sup> 1-527-840-00	<u>TER</u> FILTER, CERAMIC	
-	C071 C072 C073	1-102-123-00 1-108-599-00 1-108-599-00	MYLAR MYLAR	0.068MF 0.068MF	5% 5%	50V 50V	CF002	1-527-839-00	FILTER, CERAMIC NECTOR	
	C074 C075	1-123-318-00 1-123-356-00	ELECT ELECT	33MF 10MF	20% 20%	16V 16V	CN001	*1-560-890-00	PIN. CONNECTOR 2P	
	C076 C077 C078	1-123-356-00 1-108-603-00 1-102-106-00	ELECT MYLAR CERAMIC	10MF 0.1MF 100PF	20% 5% 10%	50V 50V 50V	CN008	*1-560-890-00 *1-560-890-00 *1-560-896-00 *1-560-893-00	PIN, CONNECTOR 2P PIN, CONNECTOR 2P PIN, CONNECTOR 8P PIN, CONNECTOR 5P	
	C079 C080	1-123-318-00 1-123-319-51	ELECT ELECT	33MF 47MF	20%	16V 16V			MMER	
	C081 C082	1-108-603-00 1-161-013-00	MYLAR CERAMIC ELECT	0.1MF 0.01MF 10MF	5% 10% 20%	50V 25V 16V	СТ001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)	
	C083	1-123-356-00						D10	<u>DE</u>	
	C084 C085	1-123-356-00 1-102-963-00	ELECT CERAMIC	10MF 33PF	20% 5%	16V 50V	D001	8-719-911-19	DIODE 1SS119	
	C086	1-123-356-00	ELECT	10MF	20%	16V	D002	8-719-911-19 8-719-911-19	DIODE 1SS119 DIODE 1SS119	
	C087 C088	1-101-004-00 1-108-579-00	CERAMIC MYLAR	0.01MF 0.01MF	5%	50 V 50 V	D003	8-719-911-19	DIODE 1SS119	
				A 7MF	20%	25.11	D005	8-719-911-19	DIODE 1SS119	
	C089 C090	1-123-369-00 1-123-369-00	ELECT ELECT	4.7MF 4.7MF	20% 20%	25 V 25 V	D006	8-719-911-19	DIODE 1SS119	
	C091	1-123-369-00	ELECT	4.7MF	20%	25 V	D007	8-719-911-19	DIODE 1SS119	
	C092 C093	1-102-115-00 1-161-059-00	CERAMIC CERAMIC	560PF 0.047MF	10% 10%	50V 25V	D008 D010 D011	8-719-911-19 8-719-911-19 8-719-911-19	DIODE 1SS119 DIODE 1SS119 DIODE 1SS119	
	C094	1-101-059-21	CERAMIC	510PF	5%	50V				
	C095	1-123-381-00	ELECT	2.2MF 0.001MF	20% 5%	50 V 50 V	D012	8-719-911-19 8-719-911-19	DIODE 1SS119 DIODE 1SS119	
	C096 C097	1-106-172-00 1-102-113-00	MYLAR CERAMIC	390PF	10%	50V	D014	8-719-911-19	DIODE 1SS119	
	C098	1-106-172-00	MYLAR	0.001MF	5%	50 <b>V</b>	D015	8-719-911-19	DIODE 1SS119	
	CO99	1-102-117-00	CERAMIC	820PF	10%	50V		IC		
	C1 01	1-123-318-00	ELECT CERAMIC	33MF 27PF	20% 5%	16V 50V	10001	8-759-276-07	IC TA7607AP	
	C102 C103	1-102-961-00	ELECT	10MF	20%	167	IC002	8-759-909-54	IC TDA2546A	
	C1 O4	1-102-125-00	CERAMIC	0.0047MF	10%	50V	10003	8-759-007-54	IC TDA4940 IC TDA4944	
	C1 O5	1-102-520-00	CERAMIC	39PF	5%	50V	IC004 IC005	8-759-007-55 8-759-602-16	IC M54572L	
	C105 C106	1-102-320-00	ELECT	10MF	20%	16V				
	C107	1-102-116-00	CERAMIC	680PF	10%	50V	IC006	8-759-157-40	IC UPC574J	
	C1 O8	1-123-319-51 1-102-074-00	CERAMIC	47MF 0.001MF	20% 10%	16V 50V	1C007 1C008	8-759-729-03 8-759-040-46	IC NJM2903D IC MC14046BCP	
	C1 O9	1-102-074-00	CERAMIC	0,001/11	10%	301	10009	8-759-201-47	IC TA7357AP	
	C110	1-161-025-00	CERAMIC	0.1MF	10%	25 V	10010	8-759-040-46	IC MC14046BCP	
	C111 C112	1-102-112-00 1-108-603-00	CERAMIC MYLAR	330PF 0.1MF	10% 5%	50 V 50 V		COI	L	,
	C113	1-106-176-00		0.0015MF	5%	50V			_	
	C114	1-123-318-00	ELECT	33MF	20%	16V	L001	1-404-476-00 1-404-476-00	COIL, IF	
	C115	1-102-125-00	CERAMIC	0.0047MF	10%	50V	L002	1-408-399-00	MICRO INDUCTOR 1.5UH	
•	C116	1-102-125-00	CERAMIC	0.0047MF	10%	50V	L004	1-408-406-00	MICRO INDUCTOR 5.6UH	
	C117	1-102-953-00	CERAMIC	18PF	5%	50V	L005	1-404-521-11	VIFT	
		nre	SCRIMINATOR				L006 L007	1-404-521-11 1-408-409-00	VIFT MICRO INDUCTOR 10UH	
							L008	1-408-408-00 1-408-428-00	MICRO INDUCTOR 8.2UH MICRO INDUCTOR 390UH	
	CDO01	1-404-501-00	DISCRIMINATO	OR, CERAMIC			L010	1-404-477-00	COIL, IF	

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Ref.No	Part No.	Description	1_			Remark	Ref.No	Part No.	Description				Remark
L011	1-408-406-00	MICRO INDUC	TOR 5.6U	H			R016	1-247-831-00	CARBON	1K	5%	1/6W	
L012	1-404-493-00	COIL					R017	1-247-819-00	CARBON	330	5%	1/6W	
L014	1-408-429-00	MICRO INDUC	TOR 470U	Н			R018	1-247-849-00	CARBON	5.6K	5%	1/6W	
							R019	1-247-829-00	CARBON	820	5%	1/6W	
	TDA	NCICTOR					R020	1-247-829-00	CARBON	820	5%	1/6W	
	IRA	NSISTOR					R021	1 247 920 00	CADDON	020	ra	1./61/	
0001	8-729-105-47	TRANSISTOR	2502026				R022	1-247-829-00 1-247-819-00	CARBON CARBON	820 330	5% 5%	1/6W 1/6W	
0002	8-729-117-54	TRANSISTOR					R023	1-247-821-00	CARBON	390	5%	1/6W	
Q003	8-729-245-83	TRANSISTOR	2SC2458				R024	1-247-845-00	CARBON	3.9K	5%	1/6W	
Q004	8-729-245-83	TRANSISTOR					R025	1-247-827-00	CARBON	680	5%	1/6W	
Q005	8-729-900-89	TRANSISTOR	DTC144ES										
0006	8-729-900-89	TRANSISTOR	DTCLAAFS				R026 R027	1-247-869-00	CARBON	39K	5%	1/6W	
Q007	8-729-900-89	TRANSISTOR					R028	1-247-843-00	CARBON CARBON	3.3K 33K	5% 5%	1/6W 1/6W	
0008	8-729-900-36	TRANSISTOR					R029	1-247-867-00	CARBON	33K	5%	1/6W	
0009	8-729-900-36	TRANSISTOR					R030	1-247-885-00	CARBON	180K	5%	1/6W	
Q010	8-729-245-83	TRANSISTOR									0,0	2, 0	
0011	0.700.045.00	TD 4 NO 7 0 TO D	0000450			1	R031	1-249-429-11	CARBON	10K	5%	1/6W	
Q011	8-729-245-83	TRANSISTOR				Ì		1-247-887-00	CARBON	220K	5%	1/6W	
Q012 Q013	8-729-245-83 8-729-245-83	TRANSISTOR TRANSISTOR						1-247-851-00	CARBON	6.8K	5%	1/6W	•
Q014	8-729-245-83	TRANSISTOR						1-249-437-11	CARBON CARBON	47K 2.2K	5% 5%	1/6W 1/6W	
0015	8-729-245-83	TRANSISTOR				1	11000	1-243-421-11	CARDON	2. LK	J/6	1/0#	
							R036	1-247-859-00	CARBON	15K	5%	1/6W	
0016	8-729-245-83	TRANSISTOR						1-247-831-00	CARBON	1K	5%	1/6W	
0017	8-729-603-30	TRANSISTOR		-3				1-249-429-11	CARBON	10K	5%	1/6W	
Q018 Q019	8-729-245-83	TRANSISTOR TRANSISTOR						1-247-831-00	CARBON	1K	5%	1/6W	
Q020	8-729-245-83 8-729-900-36	TRANSISTOR				1	R040	1-247-847-00	CARBON	4.7K	5%	1/6W	
QUEU	0.729-300-30	TRANSISTOR	DICIETES			ĺ	R041	1-247-847-00	CARBON	4.7K	5%	1/6W	
Q021	8-729-113-33	TRANSISTOR						1-247-847-00	CARBON	4.7K	5%	1/6W	
0022	8-729-900-89	TRANSISTOR				. [		1-247-847-00	CARBON	4.7K	5%	1/6W	
Q023	8-729-117-54	TRANSISTOR						1-247-863-00	CARBON	22K	5%	1/6W	
Q024 Q025	8-729-245-83 8-729-245-83	TRANSISTOR					R045	1-247-877-00	CARBON	82K	5%	1/6W	
Q023	0-129-240-00	TRANSISTOR	2302430				R046	1-247-859-00	CARBON	15K	5%	1/6W	
0026	8-729-117-54	TRANSISTOR	2SA1175					1-247-857-00	CARBON	12K	5%	1/6W	
0027		TRANSISTOR						1-247-859-00	CARBON	15K	5%	1/6W	
0028		TRANSISTOR					R049	1-247-843-00	CARBON	3.3K	5%	1/6W	
0029		TRANSISTOR					R050	1-247-891-00	CARBON	330K	5%	1/6W	
0030	8-729-900-89	TRANSISTOR	DICI44ES				R051	1 240 421 11	CADDON	2 24	Ear	1/61/	
	RESI	STOR						1-249-421-11 1-247-877-00	CARBON CARBON	2.2K 82K	5% 5%	1/6W 1/6W	
								1-247-881-00	CARBON	120K	5%	1/6W	
	1-247-847-00	CARBON	4.7K	5%	1/6W		R054	1-247-863-00	CARBON	22K	5%	1/6W	
		CARBON	560	5%	1/6W		R055	1-249-421-11	CARBON	2.2K	5%	1/6W	
		CARBON	470	5%	1/6W								
R004 R005		CARBON CARBON	4.7K 220	5% 5%	1/6W			1-247-895-00	CARBON	470K	5%	1/6W	
KUU 3	1-247-013-00	CARBUN	220	3%	1/6W				CARBON	82K 12K	5% 5%	1/6W 1/6W	
R006	1-247-837-00	CARBON	1.8K	5%	1/6W				CARBON	3.9K		1/4W I	=
		CARBON	820K	5%	1/6W				CARBON	22K	5%	1/61	
	1-249-421-11	CARBON	2.2K	5%	1/6W	1						-, -	
		CARBON	220	5%	1/6W				CARBON	22K	5%	1/6W	
R010	1-247-831-00	CARBON	1K	5%	1/6W	-		1-247-863-00	CARBON	22K	5%	1/6W	
R011	1 -247 -823 - 00	CARBON	470	5%	1/6W				CARBON	22K	5%	1/6W	
		CARBON		5%	1/6W				CARBON CARBON	4.7 2.2K	5% 5%	1/6W 1/6W	
R013	1-247-831-00	CARBON	1K	5%	1/6W	-			J		J /0	1/ 011	
		CARBON	1K	5%	1/6W				CARBON	4.7K	5%	1/6W	
R015	1-247-831-00	CARBON	1K	5%	1/6W	l	R067	1-247-831-00	CARBON	1K	5%	1/6W	

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

<b>TA-28A</b>
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TA-29C

Ref.N	o Part No.	Description	<u>n</u>			Remark	Ref.	No Part No.	Descripti	on		Remar
R068 R069	1-247-841-00 1-247-831-00	CARBON CARBON	2.7K 1K	5% 5%	1/6W 1/6W			FIL	TER			
R070	1-249-419-11	CARBON	1.5K		1/6W		SWFOC	01 1-404-438-00	FILTER, S	AW		
R071	1-247-831-00	CARBON	1K	5%	1/6W							
R072	1-247-879-00	CARBON	100K	5%	1/6W		****	********	******	******	******	******
R073	1-247-879-00	CARBON	100K	5%	1/6W			*A-7060-161-A	TA-290 RO	APD COMPLETE	/ JIV MODE	21.1
R074	1-247-899-00	CARBON	680K	5%	1/6W			N-7000-101-N	*****	*********	100 MODE	:L <i>)</i>
R075	1-247-867-00	CARBON	33K	5%	1/6W							
R076	1-249-429-11	CARBON	10K	5%	1/6W			<u>1-463-593-21</u>		(BT-882AD)		
R077	1-247-847-00	CARBON	4.7K	5%	1/6W			*4-336-029-00	PLATE, SH	IELD		
R078	1-247-843-00	CARBON	3.3K	5%	1/6W			CAP	ACITOR			
R079	1-249-429-11	CARBON	10K	5%	1/6W							
RO80	1-247-883-00	CARBON	150K	5%	1/6W		C001	1-102-531-00	CERAMIC	150PF	5%	50V
RO81	1-247-887-00	CARBON	220K	5%	1/6W		C002	1-102-530-00	CERAMIC	120PF	5%	50V
R082	1-247-843-00	CARBON	3.3K	5%	1/6W		C003	1-102-518-00	CERAMIC	33PF	5%	50V
							C004	1-102-851-00	CERAMIC	15PF	5%	50V
RO83	1-247-863-00	CARBON	22K	5%	1/6W		C005	1-102-125-00	CERAMIC	0.0047MF	10%	50V
R 084	1-247-863-00	CARBON	22K	5%	1/6W							
RO85	1-247-783-00	CARBON	10	5%	1/6W		C006	1-102-125-00	CERAMIC	0.0047MF	10%	50V
R086	1-247-867-00	CARBON	33K	5%	1/6W		C007	1-102-125-00	CERAMIC	0.0047MF	10%	50V
RO88	1-247-857-00	CARBON	12K	5%	1/6W		C008	1-102-125-00	CERAMIC	0.0047MF	10%	50V
0.000	1 040 400 11	040000		<b></b>			C009	1-102-125-00	CERAMIC	0.0047MF	10%	50V
R O 8 9	1-249-429-11	CARBON	10K	5%	1/6W		C010	1-102-125-00	CERAMIC	0.0047MF	10%	50V
RO90	1-249-429-11	CARBON	10K	5%	1/6W							
RO91	1-247-847-00	CARBON	4.7K	5%	1/6W		C011	1-123-379-00	ELECT	0.47MF	20%	50V
RO92 RO93	1-249-429-11	CARBON	10K 3.9K	5%	1/6W		C012	1-102-125-00	CERAMIC	0.0047MF	10%	50V
KU93	1-247-845-00	CARBON	3.98	5%	1/6W		C013	1-102-125-00	CERAMIC	0.0047MF	10%	50V
RO94	1-247-845-00	CARBON	2 04	EW	1 /61/		C014	1-123-318-00	ELECT	33MF	20%	50V
RO95	1-247-837-00	CARBON	3.9K 1.8K	5% 5%	1/6W		CO15	1-102-125-00	CERAMIC	0.0047MF	10%	50V
RO98	1-247-837-00	CARBON	1.8K	5%	1/6W 1/6W		0016	1 100 105 00	CEDANIC	0.004745	1.04	5011
RO99	1-247-833-00	CARBON	1.2K	5%	1/6W		CO16	1-102-125-00	CERAMIC	0.0047MF	10%	50V
R100	1-247-829-00	CARBON	820	5%	1/6W		C017 C018	1-102-125-00 1-102-529-00	CERAMIC CERAMIC	0.0047MF 100PF	10%	50 V
	1 217 025 00	0,111,011	020	38	1/01		C019	1-102-529-00	CERAMIC	4PF	5% 0.25PF	50V
R101	1-249-429-11	CARBON	10K	5%	1/6W	i	C020	1-102-518-00	CERAMIC	33PF	5%	50V 50V
R102	1-249-429-11	CARBON	10K	5%	1/6W		0020	1-102-310-00	CERMITO	33/1	J#	301
R103	1-247-879-00	CARBON	100K	5%	1/6W		C021	1-102-504-00	CERAMIC	4PF	0.25PF	50V
R104	1-247-859-00	CARBON	15K	5%	1/6W		C022	1-102-529-00	CERAMIC	100PF	5%	50V
R105	1-247-879-00	CARBON	100K	5%	1/6W		C023	1-102-518-00	CERAMIC	33PF	5%	507
							C025	1-123-307-00	ELECT	100MF	20%	10V
R106	1-247-863-00	CARBON	22K	5%	1/6W		C026	1-102-108-00	CERAMIC	150PF	10%	50V
R107	1-247-803-00	CARBON	68	5%	1/6W	i						
R109	1-247-831-00	CARBON	1K	5%	1/6W		C027	1-123-369-00	ELECT	4.7MF	20%	25V
R110	1-247-875-00	CARBON	68K	5%	1/6W	1	C028	1-102-959-00	CERAMIC	22PF	5%	50V
R111	1-247-903-00	CARBON	1M	5%	1/6W	İ	C029	1-102-959-00	CERAMIC	22PF	5%	50V
0110	1 047 062 00	CADDON	001/				C030	1-101-004-00	CERAMIC	0.01MF	*	50V
R112	1-247-863-00	CARBON	22K	5%	1/6W	ĺ	CO31	1-101-004-00	CERAMIC	0.01MF		50V
R113	1-247-887-00	CARBON	220K		1/6W							1
R114	1-247-879-00	CARBON	100K		1/6W		C032	1-102-125-00	CERAMIC	0.0047MF	10%	507
R115 R116	1-247-867-00 1-247-863-00	CARBON	33K	5%	_,		C033	1-102-959-00	CERAMIC	22PF	5%	50V
R117	1-249-434-11	CARBON CARBON	22K 27K	5% 5%	1/6W		C034	1-101-004-00	CERAMIC	0.01MF		50V
R118	1-247-867-00	CARBON	33K	5%	1/6W 1/6W		C035	1-123-318-00	ELECT	33MF	20%	16V
R119	1-247-843-00	CARBON	3.3K	5%	1/6W		C036	1-108-807-00	MYLAR	0.018MF	5%	50V
KIII	1-247-043-00	CANDON	2.24	J /6	170#	ĺ	C027	1 122 256 00	FLECT	1045	201	2.511
							C037 C038	1-123-356-00	ELECT MYLAR	10MF	20%	16V
	VAR I	ABLE RESISTO	OR				C039	1-108-599-00	MYLAR	0.068MF 0.068MF	5% 5*	50V 50V
	-711(1					. 1	C040	1-108-399-00	CERAMIC	33PF	5% 5%	
R V 001	1-228-993-00	RES, ADJ, CA	ARBON 4.7	′K			CO41	1-123-318-00	ELECT	33MF	5% 20%	50V 16V
		RES, ADJ, CA				1	50.1	1 125-510-00	22201	33111	20%	104
		RES, ADJ, CA				I	C042	1-102-125-00	CERAMIC	0.0047MF	10%	50V

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

## **TA-29C**

Ref.N	o Part No.	Description			Remark	, Ref.No	Part No.	Description				Remark
C043 C047 C048 C050 C051	1-123-369-00 1-123-318-00 1-123-330-00 1-102-106-00 1-108-603-00	ELECT ELECT ELECT CERAMIC MYLAR	4.7MF 33MF 22MF 100PF 0.1MF	20% 20% 20% 10% 5%	25V 16V 16V 50V 50V	D008	8-719-911-19 <u>IC</u> 8-759-276-07	DIODE 1SS119			· .	
C052 C053 C054 C055 C056	1-123-356-00 1-123-332-00 1-123-356-00 1-123-318-00 1-123-381-00	ELECT ELECT ELECT ELECT ELECT	10MF 47MF 10MF 33MF 2.2MF	20% 20% 20% 20% 20%	50V 16V 16V 16V 50V	IC003 IC004 IC005 IC006	8-759-103-70 8-759-157-40 8-759-729-03 8-759-040-46	IC UPC1391HA IC UPC574J IC NJM2903D IC MC14046BCF	)			
C057 C058 C059 C060 C061	1-102-074-00 1-123-356-00 1-123-356-00 1-101-004-00 1-123-318-00	CERAMIC ELECT ELECT CERAMIC ELECT	0.001MF 10MF 10MF 0.01MF 33MF	10% 20% 20% 20%	50V 16V 16V 50V 16V	L001 L002 L003 L004 L005	1-404-476-00 1-404-476-00 1-408-591-00 1-408-406-00 1-404-522-11	COIL, IF COIL, IF MICRO INDUCTO MICRO INDUCTO VIFT	OR 1UH OR 5.6	UH		
C062 C063 C064 C066 C067	1-102-125-00 1-123-356-00 1-102-125-00 1-108-603-00 1-123-307-00	CERAMIC ELECT CERAMIC MYLAR ELECT	0.0047MF 10MF 0.0047MF 0.1MF 100MF	10% 20% 10% 5% 20%	50V 16V 50V 50V 10V	L006 L007 L008 L009 L010	1-408-406-00 1-404-521-21 1-404-521-21 1-408-408-00 1-408-429-00	MICRO INDUCTO VIFT VIFT MICRO INDUCTO MICRO INDUCTO	R 8.2	UH		
C068 C069 C070 C071 C072	1-123-330-00 1-161-025-00 1-101-004-00 1-102-113-00 1-102-114-00	ELECT CERAMIC CERAMIC CERAMIC CERAMIC	22MF 0.1MF 0.01MF 390PF 470PF	20% 10% 10%	16V 25V 50V 50V 50V	L011 L012 L013		MICRO INDUCTO MICRO INDUCTO MICRO INDUCTO	R 18U	Н		
C073 C074 C075 C076 C077	1-106-172-00	MYLAR ELECT ELECT CERAMIC	0.001MF 0.47MF 10MF 330PF 39PF	5% 20% 20% 10% 5%	50V 50V 16V 50V 50V	Q001 Q002 Q003 Q004 Q005	8-729-105-47 8-729-117-54 8-729-245-83 8-729-245-83 8-729-245-83	TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S TRANSISTOR 2S	A1175 C2458 C2458	-L		
	DIS	CRIMINATOR				0006	8-729-603-30	TRANSISTOR 25	C403SI	P-3		
CD001	1-404-407-00	DISCRIMINATO	R			Q007 Q009 Q010	8-729-245-83 8-729-245-83 8-729-117-54	TRANSISTOR 2SI TRANSISTOR 2SI TRANSISTOR 2SI	C2458			
	FIL					Q011	8-729-245-83	TRANSISTOR 25				
CF001	1-527-262-00	CERAMIC FILT	ER (6.0MHZ)			0012 0013	8-729-245-83 8-729-245-83	TRANSISTOR 250 TRANSISTOR 250	2458			
CN006	*1-560-890-00 *1-560-890-00 *1-560-893-00	PIN. CONNECTO	OR 2P			0014 0015 0016	8-729-245-83 8-729-900-36 8-729-113-32 8-729-900-36	TRANSISTOR 2SO TRANSISTOR DTO TRANSISTOR 2SO TRANSISTOR DTO	C124ES 3733			
CN008	*1-560-896-00	PIN, CONNECTO			-	Q018	8-729-245-83	TRANSISTOR 250				
	TRIM	MER					RESI	STOR				
CT001	1-409-333-00	TRAP, CERAMIC	(6.0MHZ)		j	R001 R002	1-249-429-11 1-247-863-00	CARBON	10K	5%	1/6W	
	DIO	DE				R003	1-247-847-00	CARBON CARBON	22K 4.7K	5% 5%	1/6W 1/6W	
D001 D003 D005	8-719-911-19 8-719-911-19	DIODE 155119 DIODE 155119				R005		CARBON CARBON	220 560	5% 5%	1/6W 1/6W	
D006 D007	8-719-911-19	DIODE 1SS119 DIODE 1SS119 DIODE 1SS119				R007		CARBON	4.7K 470 1.8K	5% 5% 5%	1/6W 1/6W 1/6W	

## TA-29C FT-3C/D

Ref N	o Part No.	Description				Remark	Dof N	o Part No.	Description				Domask
						Keniark	Kei . Mi	o Part No.	Description				Remark
R009	1-247-901-00	CARBON	820K	5%	1/6W		R063	1-247-847-00	CARBON	4.7K	5%	1/6W	
R010	1-247-833-00	CARBON	1.2K	5%	1/6W		R064	1-247-843-00	CARBON		5%	1/6W	
R011 R012	1-247-815-00 1-247-831-00	CARBON CARBON	220 1K	5% 5%	1/6W 1/6W		R065 R066	1-247-867-00	CARBON	33K	5%	1/6W	
RO13	1-247-831-00	CARBON	2.2K	5%	1/6W		R067	1-247-845-00 1-249-419-11	CARBON CARBON		5% 5%	1/6W 1/6W	
	1 211 003 00	O, III DOIL		J,0	1,011		1007	1-245-415-11	CARDON	1.5%	J/6	1/04	
R014	1-247-833-00	CARBON	1.2K	5%	1/6W		R068	1-247-885-00	CARBON	180K	5%	1/6W	
R015	1-247-875-00	CARBON	68K	5%	1/6W		R069	1-249-437-11	CARBON	47K	5%	1/6W	
R016	1-247-831-00	CARBON	1K	5%	1/6W		R070	1-249-429-11	CARBON	10K	5%	1/61/	
R017	1-247-831-00	CARBON	1K	5%	1/6W		R071	1-247-847-00	CARBON	4.7K	5%	1/6W	
R018	1-247-843-00	CARBON	3.3K	5%	1/6W		R072	1-247-831-00	CARBON	1K	5%	1/6W	
RO19	1-247-831-00	CARBON	1K	5%	1/6W		R073	1-247-863-00	CARBON	22K	5%	1/6W	
RO20	1-247-891-00	CARBON	330K	5%	1/6W		R074	1-247-863-00	CARBON	22K	5%	1/6W	
RO21	1-247-831-00	CARBON	1K	5%	1/6W		R075	1-247-783-00	CARBON	10	5%	1/6W	
RO22	1-247-817-00	CARBON	270	5%	1/6W		R076	1-247-831-00	CARBON	1K	5%	1/6W	
RO23	1-247-821-00	CARBON	390	5%	1/6W		R077	1-249-419-11	CARBON		5%	1/6W	
0004	1 047 047 00	010000	4 74										
RO24 RO25	1-247-847-00 1-247-831-00	CARBON	4.7K	5%	1/6W		R078	1-247-831-00	CARBON		5%	1/5W	
RO26	1-247-831-00	CARBON CARBON	1K 100K	5% 5%	1/6W		R079	1-247-841-00	CARBON		5%	1/6W	
RO27	1-247-867-00	CARBON	33K	5%	1/6W 1/6W		R080 R081	1-247-837-00	CARBON CARBON		5%	1/6W	
RO28	1-247-843-00	CARBON	3.3K	5%	1/6W		R082	1-247-837-00	CARBON		5% 5%	1/6W	
	1 217 010 00	0.111.0011	0.01	9,0	1/01		KOOL	1-247-773-00	CARBON	4.7	36	1/6W	
RO30	1-247-891-00	CARBON	330K	5%	1/6W		R083	1-247-831-00	CARBON	1K	5%	1/6W	
RO31	1-249-421-11	CARBON	2.2K	5%	1/6W		R084	1-247-803-00	CARBON	68	5%	1/6W	
RO32	1-247-877-00	CARBON	82K	5%	1/6W		R085	1-249-421-11	CARBON		5%	1/6W	
RO33	1-247-879-00	CARBON	100K	5%	1/6W		R086	1-249-421-11	CARBON		5%	1/6W	
RO34	1-247-879-00	CARBON	100K	5%	1/6W		R087	1-249-434-11	CARBON	27K	5%	1/6W	
RO35	1-249-429-11	CARBON	10K	5%	1/6W			VAR	IABLE RESISTO	)R			
RO36	1-247-863-00	CARBON	22K	5%	1/6W								
RO37	1-249-429-11	CARBON	10K	5%	1/6W		RV001	1-228-993-00	RES, ADJ, CA	RBON 4.7	'K		
RO38	1-249-421-11	CARBON	2.2K	5%	1/6W								
RO39 2	<u>N</u> . 1 - 247 - 71 9 - 51	CARBON	3.3K	5%	1/4W	F	_	FIL	TER				
RO40	1-247-863-00	CARBON	22K	5%	1/6W		SF001	1-404-345-00	SAWF				
RO41	1-247-863-00	CARBON	22K	5%	1/6W		3, 001	1-404-343-00	JARI				
RO42	1-247-863-00	CARBON	22K	5%	1/6W		*****	******	*****	*****	****	*****	******
RO43	1-247-863-00	CARBON	22K	5%	1/6W								
RO44	1-249-434-11	CARBON	27K	5%	1/6W			*A-7060-158-A	FT-3C BOARD,				
0045	1 047 057 00	CARRON		F = 4				*A-7060-162-A	FT-3D BOARD,				
RO45 RO46	1-247-857-00	CARBON	12K	5%	1/6W				******	*****	****	*****	*
RO45	1-247-859-00 1-247-863-00	CARBON	15K	5%	1/6W			+2 600 044 01	CACE CUTELE				
RO48	1-249-429-11	CARBON CARBON	22K 10K	5% 5%	1/6W 1/6W			*3-689-044-01	CASE, SHIELD				
RO49	1-247-849-00	CARBON	5.6K	5%	1/6W			*3-689-521-01 *3-689-538-01	HOLDER, LED, HOLDER (RIGH	KUUNU	ATTON	TURE	
11015	1 247 045 00	CAMBON	J. 0K	J #	1/0#			*3-689-539-01	HOLDER (LEFT	) INDIC	ATION	TUBE	
RO50	1-247-831-00	CARBON	1K	5%	1/6W					/ , 111010	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1012	1
RO51	1-247-903-00	CARBON	1M	5%	1/6W			CAP	ACITOR				
RO52	1-247-863-00	CARBON	22K	5%	1/6W								
RO53	1-247-883-00	CARBON		5%	1/6W		C001	1-102-864-00	CERAMIC	5PF		0.5F	50V
RO54	1-247-887-00	CARBON	220K	5%	1/6W		C005	1-124-258-00	ELECT	3.3MF			25 V
RO55	1-247-863-00	CARBON	22K	5%	1/6W		C006 C007	1-124-255-00	ELECT	1MF 3.3MF			50V 25V
RO56	1-247-863-00	CARBON	22K	5%	1/6W		C008	1-102-112-00	CERAMIC	330PF			25 <b>V</b> 50 V
RO57	1-249-421-11	CARBON	2.2K	5%	1/6W		3000	1 100-110-00	OLAMITO	330FT		10%	JU 1
RO58	1-249-429-11	CARBON	10K	5%	1/6W		C010	1-161-059-00	CERAMIC	0.047MF		10%	25V
RO59	1-247-899-00	CARBON	680K	5%	1/6W		CO11	1-161-055-00	CERAMIC	0.022MF			25V
							C012	1-161-059-00	CERAMIC	0.047MF		10%	25V
RO60	1-247-867-00	CARBON	33K	5%	1/6W		CO13	1-161-059-00	CERAMIC	0.047MF			25V
RO61	1-247-857-00	CARBON	12K	5%	1/6W		CO14	1-161-043-00	CERAMIC	0.0022MF	F	10%	25 <b>V</b>
RO62	1-249-429-11	CARBON	10K	5%	1/6W	i							

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

## FT-3C/D

0.64									•			
Ref.N	lo Part No.	Descripti	on		Remark	Ref. No	Part No.	Description	<u>on</u>			Remark
C015	1-124-234-00		22MF	20%	10V	R011	1-249-437-11	CARBON	47K	5%	1/6W	
C016	1-124-225-00	ELECT	100MF	20%	6.3V	R012	1-249-429-11		10K	5%	1/6W	
						R013	1-249-437-11		47K	5%.		
	<u>co</u>	NNECTOR				R014	1-249-437-11		47K	5%	1/6W	
CNUUS	*1 564 004 00	DIN CONN	CCTOO CD			R015	1-249-437-11	CARBON	47K	5%	1/6W	
	*1-564-004-00 *1-564-010-11		ECTUR 5P									
CN013	*1-564-004-00	PIN, CONN	ECTOR IIP			R016	1-249-437-11		47K	5%	1/6W	
0,1013	1-304-004-00	FIN, CONN	ECTUR SP			R017	1-249-437-11		47K	5%	1/6W	
	TR	IMMER				R018	1-249-437-11		47K	5%	1/6W	
	110	THEN				R030 R031	1-247-862-00		20K	5%	1/6W	
CV001	1-141-272-00	CAP. TRIM	MER			K031	1-247-862-00	CARBON	20K	5%	1/6W	
						R032	1-247-862-00	CARBON	201	-~	1./61/	
	DIC	DDE				R033	1-247-862-00	CARBON	20K 20K	5%	1/6W	
						R034	1-247-853-00	CARBON	8,2K	5% 5%	1/6W 1/6W	
D001	8-719-100-54					R035	1-249-429-11	CARBON	10K	5%	1/6W	
D004	8-719-911-19					R036	1-249-429-11	CARBON	10K	5%	1/6W	
D005	8-719-911-19				*			57.11.0071	101	J/6	170#	
D006	8-719-911-19	DIODE 1551	119 (UK MODEL			R037	1-249-429-11	CARBON	10K	5%	1/6W	
D007	8-719-911-19	DIODE 1881	119 (UK MODEL	.)		R038	1-247-862-00	CARBON	20K	5%	1/6W	
D016	8-719-901-66	DIODE LT	22001			R039	1-247-857-00	CARBON	12K	5%	1/6W	
DO17	8-719-901-66					R051	1-247-817-00	CARBON	270	5%	1/6W	
D018	8-719-901-66					R052	1-247-817-00	CARBON	270	5%	1/6W	
D019	8-719-901-66					R053	1 047 017 00	0177011				
0020	8-719-901-66	DIODE LT-9	200N			R054	1-247-817-00	CARBON	270	5%	-1/6W	
			20011			R055	1-247-817-00 1-247-817-00	CARBON	270	5%	1/6W	
D021	8-719-901-66		200N			R056	1-247-817-00	CARBON CARBON	270	5%	1/6W	
D027	8-719-901-66	DIODE LT-9	200N			R062	1-247-817-00	CARBON	270 270	5% 5%	1/6W	
D028	8-719-901-66	DIODE LT-9	200N				1 477 017 00	CARDON	270	36	1/6W	
D029	8-719-901-66	DIODE LT-9	200N			R063	1-247-817-00	CARBON	270	5%	1/6W	
D031	8-719-812-31	DIODE TLR1	23			R064	1-247-817-00	CARBON	270	5%	1/6W	
0022	0 710 010 01	01005 7104	••			R066	1-247-817-00	CARBON	270	5%	1/6W	
D032	8-719-812-31	DIOUE ILRI	23		·	R067	1-247-817-00	CARBON	270	5%	1/6W	
	INDICA	TOR TUBE				R068	1-249-429-11	CARBON	10K	5%	1/6W	
	11101011	TON TODE				D0.60						
FL001	1-519-350-11	INDICATOR	TURE ELLIOPE	SCENT		R069	1-249-429-11	CARBON	10K	5%	1/6W	
		1	TODE, TEOORE.	SCENT		R070 R071	1-249-429-11	CARBON	10K	5%	1/6W	
	IC					R072	1-249-429-11 1-249-429-11	CARBON	10K	5%	1/6W	-
					į		1-249-429-11	CARBON CARBON	10K	5%	1/6W	
I C001	8-759-103-31	IC UPD7519	HG-553-12				1-243-423-11	CARDON	10K	5%	1/6W	
10002	8-759-103-32				1	R074	1-247-775-00	CARBON	4.7	5%	1/6W	
IC003		IC TC40H00					1-215-476-00	METAL	200K	1%	1/6W	
I COO4 I COO5		IC UPC393G					1-247-863-00	CARBON	22K	5%	1/6W	
10005	8-752-010-60	IC CX20106					1-249-429-11	CARBON	10K	5%	1/6W	
	TDA	NCT STOD				R083	1-249-429-11	CARBON	10K	5%	1/6W	
	TRAI	NSISTOR				DO0.4	1 047 047 05	24000				
0001	8-729-902-11	TRANSISTOR	2502021				1-247-847-00	CARBON	4.7K		1/6W	
Q002		TRANSISTOR	2502021		1			CARBON	470	5%	1/6W	
Q003	8-729-954-51	TRANSISTOR						CARBON CARBON	47K		1/6W	
Q004	8-729-954-51	TRANSISTOR						CARBON	27K 10	5% 5%	1/6W	
Q005	8-729-954-51	TRANSISTOR	2SC1545				217 705-00	CARBOIT	10	3,6	1/6W	
0000	0 700 000 0						TIWZ	СН				
0006	8-729-900-30	TRANSISTOR			İ							
Q010	8-729-902-11	TRANSISTOR	2SC2021			S001	1-554-174-00	SWITCH, KEY	BOARD (0	UICK '	TIMER)	
	DECT	goro:					-554-174-00	SWITCH, KEY	BOARD (S	P/LP)		
	KESI	STOR					-554-174-00	SWITCH, KEY	BOARD (T	IMER I	REC)	
R001	1-247-875-00	CARBON	68K 5%	1/64			-554-174-00	SWITCH, KEY	BOARD (T	IMER :	SET)	
R002		CARBON	1M 5%	1/6W 1/6W		S006	-554-174-00	SWITCH, KEY	BOARD (S	ELECT	)	
R010		CARBON	470K 5%	1/6W		S007	-554-174-00	SWITCH, KEY	DOADD /**	FVT \		
			- 10	-,	•			Serrions VET	OUNCD (N	CXI)		

## FT-3C/D PD-11 PC-15B

							5.5.11	D No.	D			D m le
	Ref.No	Part No.	Description			Remark	Ket.No	Part No.	Description			Remark
,	S008 S009 S010 S011 S012	1-554-174-00 1-554-174-00 1-554-174-00 1-554-174-00 1-554-174-00	SWITCH, KEY SWITCH, KEY SWITCH, KEY SWITCH, KEY SWITCH, KEY	BOARD (TIME) BOARD (TIME) BOARD (-)	R CHECK)	)	C120 C121 C126 C127 C129	1-162-306-31	CERAMIC CERAMIC CERAMIC CERAMIC ELECT	22PF 0.01MF 0.1MF 0.1MF 10MF	5% 20% 20% 20% 20%	50V 16V 16V 16V 16V
	S014 S015 S016 S020 S021	1-554-088-00 1-554-174-00 1-554-174-00 1-553-754-00 1-553-754-00	SWITCH, KEY SWITCH, KEY SWITCH, KEY SWITCH, SLID SWITCH, SLID	ROARD (DUR)	K/COUNT) /SUB) [X/PCM)		C130 C140 C144 C145 C146	1-162-207-31 1-161-974-00 1-162-306-31 1-162-306-31 1-123-306-00	CERAMIC CERAMIC CERAMIC CERAMIC ELECT	22PF 0.1MF 0.01MF 0.01MF 47MF	5% 20% 20% 20% 20%	50V 16V 16V 16V 6.3V
	S022	1-553-754-00		E (MULTI PCM	1)		C161 C162	1-162-294-31 1-130-072-00	FILM	0.001MF 0.022MF	10% 2%	50V 100V
		CRY	STAL				C301 C302	1-130-493-00 1-161-974-00	MYLAR CERAMIC	0.068MF 0.1MF	5% 20%	50V 16V
	X O 0 1	1-567-121-00	VIBRATOR, CR	YSTAL			C702	1-123-356-00	ELECT	10MF	20%	16V
	****	*************		*****	******	******	C703 C704 C706 C707 C708		ELECT CERAMIC CERAMIC CERAMIC ELECT	10MF 0.01MF 0.01MF 0.1MF 10MF	20% 30% 20% 20%	16V 16V 16V 16V 16V
		DIO	DE									
		8-719-110-32		•		******	C709 C711 C712 C713		CERAMIC CERAMIC CERAMIC CERAMIC	0.01MF 0.1MF 0.1MF	20% 20% 20% 20%	16V 16V 16V
		*A-7060-159-A	PC-15B BOARD	. COMPLETE			C714	1-161-974-00	CERAMIC	0.1MF	20%	16V
			******				C717 C718		CERAMIC CERAMIC	0.1MF 0.1MF	20% 20%	16V 16V
		CAP	ACITOR				C721 C722	1-161-974-00 1-123-306-00	CERAMIC ELECT	0.1MF 47MF	20% 20%	16V 6.3V
	CO01	1-161-974-00		0.1MF		16V	C731	1-161-974-00	CERAMIC	0.1MF	20%	16V
	CO02 CO03 CO04 CO05	1-162-306-31 1-162-306-31 1-161-974-00 1-123-381-00		0.01MF 0.01MF 0.1MF 2.2MF	20% 20% 20%	16V 16V 16V 50V	C802 C803 C804 C805	1-123-306-00 1-161-057-00 1-162-306-31	CERAMIC ELECT CERAMIC CERAMIC	0.1MF 47MF 0.033MF 0.01MF	20% 20% 10% 20%	16V 6.3V 25V 16V
	CO06 CO07	1-162-306-31 1-162-306-31	CERAMIC CERAMIC	0.01MF 0.01MF	20%	16V 16V	C806	1-130-487-00	MYLAR	0.022MF	5% 5~	50V
	CO08 CO09 C1 01 C1 02 C1 03 C1 04	1-161-025-00 1-102-513-00 1-161-059-00 1-161-059-00 1-162-207-31 1-162-215-31	CERAMIC CERAMIC CERANIC CERAMIC CERAMIC CERAMIC	0.1MF 18PF 0.047MF 0.047MF 22PF 47PF	10% 5% 20% 20% 5%	25V 50V 25V 25V 50V	C807 C808 C809 C810 C811		MYLAR FILM CERAMIC ELECT CERAMIC	0.022MF 0.001MF 0.01MF 47MF 0.1MF	5% 5% 20% 20% 20%	50V 50V 16V 6.3V 16V
							C812		MYLAR	0.022MF	5%	50V
	C105 C106 C107 C108	1-162-215-31 1-123-356-00 1-161-974-00 1-162-306-31	ELECT CERAMIC CERAMIC	47PF 10MF 0.1MF 0.01MF	5% 20% 20% 20% 20%	50V 16V 16V 16V 16V	C813 C814 C815 C816	1-130-487-00 1-162-306-31 1-136-141-00 1-130-467-00	MYLAR CERAMIC FILM MYLAR	0.022MF 0.01MF 0.001MF 470PF	5% 20% 5% 5%	50V 16V ' 50V 50V
	C109	1-162-306-31	CERAMIC	0.01MF			C817	1-130-467-00	MYLAR CERAMIC	470PF 0.01MF	5% 20%	50V 16V
	C110 C111 C112 C113	1-102-125-00 1-161-974-00 1-123-356-00 1-123-356-00	CERAMIC CERAMIC ELECT ELECT	0.0047MF 0.1MF 10MF 10MF	10% 20% 20% 20%	50V 16V 16V 16V	C915 C950	1-162-306-31 1-162-289-31 CON	CERAMIC NECTOR	390PF	10%	50V
	C113	1-123-379-00	ELECT	0.47MF	20%	50V	CNITCO			00.00		
	C115 C116 C117 C118 C119	1-123-382-00 1-124-226-11 1-162-191-31 1-161-974-00 1-123-356-00	ELECT ELECT CERAMIC CERAMIC ELECT	3.3MF 6.8MF 2.2PF 0.1MF 10MF	20% 20% 10% 20% 20%	50V 10V 50V 16V 16V	CN103	*1-564-012-00 *1-564-012-00 *1-564-020-00	PIN, CONNECT PIN, CONNECT PIN, CONNECT	OR 2P		

### PC-15B

	Part No.	Description	Remark	Ref.No	Part No.	Description				Remark
CN105	*1-564-015-00	PIN, CONNECTOR 5P		L802	1-407-169-XX	MICRO INDUCT	OR 100L	Н		
CN106 CN107 CN108	*1-564-022-00 *1-564-013-00 *1-564-013-00	PIN, CONNECTOR 5P PIN, CONNECTOR 12P PIN, CONNECTOR 3P PIN, CONNECTOR 3P PIN, CONNECTOR 3P PIN, CONNECTOR 5P				NSISTOR			·	
CNIII	*1-564-013-00	PIN, CONNECTOR 3P		Q003 0004	8-729-900-33 8-729-902-11					
CN112	*1-564-015-00	PIN, CONNECTOR 5P		Q005	8-729-900-80					
	CON	POSITION CIRCUIT BLOCK		Q006 Q007	8-729-900-45 8-729-900-33	TRANSISTOR D				
CP161	1-232-929-11	COMPOSITION CIRCUIT BLOCK		0008	8-729-900-33					
	DIO	D <u>E</u>		Q009 Q010	8-729-900-45 8-729-900-33					
D001	9.710.011.10	DIODE 1SS119		Q011	8-729-900-33	TRANSISTOR D	TC144EF			
D001		DIODE 155119 DIODE 155119		0012	8-729-900-89	TRANSISTOR D				
D003	8-719-911-19	DIODE 1SS119		Q161	8-729-902-11	TRANSISTOR 2	202021			
D004 D005	8-719-911-19			Q162	8-729-902-11	TRANSISTOR 2	SC2021			
0000	0-/19-911-19	DIODE 1SS119		0163	8-729-900-38					
D101	8-719-815-87	DIODE 1S1587		Q703 Q704	8-729-902-11 8-729-902-11					
D161		DIODE 1SS119		0801	8-729-900-63	TRANSISTOR D				
0162 D702	8-719-911-19 8-719-911-19	DIODE 188119 DIODE 188119								
D703	8-719-911-19			Q802 Q803	8-729-900-36 8-729-900-89					
				0804	8-729-245-83					
D801 D907	8-719-911-19 8-719-911-19			0805	8-729-245-83	TRANSISTOR 2	SC2458		•	
D908	8-719-911-19	DIODE 188119 DIODE 188119		Q806	8-729-245-83	TRANSISTOR 2	SC2458			•
	* 10			0807	8-729-245-83					
	10			Q808	8-729-900-36 8-729-105-73			^		
		IC MB88421-187M		Q809 Q905	8-729-900-33	TRANSISTOR 2		۷		
	8-759-045-38 8-759-700-81			4						
IC101	8-759-913-65	IC CX23062			RES	ISTOR				
IC102	8-759-913-66	IC CX23061		R001	1-247-831-00		1K	5%	1/6W	
IC103	8-759-302-92	IC CX20142		R004	1-247-831-00		1K	5%	1/6W	
IC104	8-759-302-93	IC CX20143		R005 R006	1-247-831-00 1-247-831-00	CARBON CARBON	1K 1K	5% 5%	1/6W 1/6W	
		IC MSM5128-12RS		R007	1-247-831-00	CARBON	îĸ	5%	1/6W	
	8-759-915-30	IC MSM5128-12RS IC CX23078		0026	1 247 050 00	CADDON	154	E OV	1./611	
				R036 R037	1-247-859-00 1-247-879-00	CARBON CARBON	15K 100K	5% 5%	1/6W 1/6W	
IC151	8-759-919-93	IC MB88201-203N			1-249-429-11	CARBON	10K	5%	1/6W	
IC152	8-759-919-93	IC MB88201-203N IC MB88201-203N		R039	1-249-429-11	CARBON	10K	5%	1/6W	
IC154	8-759-919-94	IC MB88201-204N		R040	1-247-869-00	CARBON	39K	5%	1/6W	
IC155	8-759-200-54	IC TC40H386P		R041	1-249-437-11	CARBON	47K	5%	1/6W	
IC301	8-759-240-69	IC TC4069HBP				CARBON	10K	5%	1/6W	
	8-759-913-62		1		1-249-429-11 1-247-831-00	CARBON CARBON	10K 1K	5% 5%	1/6W 1/6W	
10802	8-759-913-62	IC IR3N05		R104	1-247-831-00	CARBON	1K	5%	1/6W	
	C011	<u>L</u>		R105	1-249-429-11	CARBON	10K	5%	1/6W	
L102	1 407 160 VV	MICRO INDUCTOR 100UH	;		1-249-417-11	CARBON	1 K	5%	1/6W	
L702		MICRO INDUCTOR 1000H			1-249-421-11	CARBON	2.2K	5%	1/6W	
L703		MICRO INDUCTOR 100UH			1-247-831-00	CARBON	1K	5%	1/6W	
L704		MICRO INDUCTOR 100UH				CARBON CARBON	470 390	5% 5%	1/6W 1/6W	
L705	1-4U/-169-XX	MICRO INDUCTOR 100UH					330	J /0	1,04	
L801	1-404-617-21	COIL, IFT			1-249-419-11	CARBON		5%	1/6W	
					1-247-827-00 1-247-853-00	CARBON CARBON	680 8.2K	5% 5%	1/6W 1/6W	
						CARBON	1.2K		1/6W	

PC-1	5B
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Ref.No	Part No.	Description				Remark	Ref.No	Part No.	Description			Remark
R116	1-247-833-00	CARBON	1.2K	5%	1/6W		R815	1-247-831-00	CARBON	1K 5%		
R117	1-215-415-00	METAL	560	1%	1/6W		R816	1-247-831-00	CARBON	1K 5%		
R118	1-249-429-11	CARBON	10K	5%	1/6W		R817	1-249-434-11	CARBON	27K 5%		
R119	1-247-859-00	CARBON	15K	5%	1/6W		R818	1-249-434-11	CARBON	27K 5%		
R1 20	1-247-859-00	CARBON	15K	5%	1/6W		R819	1-247-859-00	CARBON	15K 5%	1/6W	
R121	1-247-831-00	CARBON	1K	5%	1/6W		R940	1-249-429-11	CARBON	10K 5%		
R1 22	1-247-863-00	CARBON	22K	5%	1/6W		R950	1-249-429-11	CARBON	10K 5%	1/6W	
R1 23	1-247-861-00	CARBON	18K	5%	1/6W							
R124	1-247-843-00	CARBON	3.3K	5%	1/6W	1		VAR	IABLE RESISTOR			
R1 25	1-247-815-00	CARBON	220	5%	1/6W		RV102	1-228-991-00	RES, ADJ, CAR	RON 2 21		
R140	1-249-429-11	CARBON	10K	5%	1/6W		RV102	1-228-991-00	RES, ADJ, CAR			
R141	1-247-867-00	CARBON	33K	5%	1/6W			1-228-989-00	RES, ADJ, MET		470	
R141	1-247-823-00	CARBON	470	5%	1/6W		RV802	1-228-989-00	RES, ADJ, MET			
R148	1-247-823-00	CARBON	680	5%	1/6W			1-228-991-00	RES, ADJ, MET			
R149	1-247-879-00	CARBON	100K	5%	1/6W		11003		RES TOO S TREE	AL GLALL		
K143	1-24/-8/3-00	CARDON	1001	J#				CRY	STAL			
R153	1-247-843-00	CARBON	3.3K	5%	1/6W							
R154	1-247-843-00	CARBON	3.3K	5%	1/6W		X101	1-567-419-11	VIBRATOR, LIT	HIUM TANT	ALATE	
R155	1-247-843-00	CARBON	3.3K		1/6W							
R161	1-247-847-00	CARBON	4.7K		1/6W		*****	*****	********	******	*******	******
R164	1-247-887-00	CARBON	220K	5%	1/6W							
							,	*A-7060-160-A	RP-25D BOARD,			
R166	1-249-429-11	CARBON	10K	5%	1/6W	1						
R168	1-249-437-11	CARBON	47K	5%	1/6W	1		*3-689-065-01	CASE (MAIN),	SHIELD, R	P	
R169	1-249-429-11	CARBON	10K	5%	1/6W			*3-689-067-01	LID, REAR, SH			
R171	1-247-843-00	CARBON	3.3K	5%	1/6W			CAD	ACITOR			
0.201	1 247 954 00	CADDON	0 11	5%	1/64	l		CAP	ACTION			
R301	1-247-854-00	CARBON	9.1K 33K	5%	1/6W 1/6W	-	C001	1-161-025-00	CERAMIC	0.1MF	10%	25 V
R302	1-247-867-00	CARBON		5%	1/6W	1	C002	1-123-618-00		22MF	20%	6.3V
R707	1-247-863-00	CARBON	22K 240K	5%	1/6W		C003	1-161-974-00		0.1MF	20%	16V
R708	1-247-888-00	CARBON	2401	JA	1/04		C004	1-161-013-00		0.01MF	10%	25V
R709	1-247-863-00	CARBON	22K	5%	1/6W		C005	1-123-618-00		22MF	20%	6.3V
	1-247-879-00	CARBON	100K	5%	1/6W	1 1	0000					
	1-249-437-11	CARBON	47K	5%	1/6W		C006	1-123-618-00	ELECT	22MF	20%	6.3V
	1-247-843-00	CARBON	3.3K	5%	1/6W		C007	1-161-013-00		0.01MF	10%	25 V
	1-247-903-00	CARBON	1M	5%	1/6W		C009	1-101-884-00		56PF	5%	50V
	1-217 300 00				.,	1	C010	1-102-816-00		120PF	5%	50V
R714	1-247-831-00	CARBON	1K	5%	1/6W		CO11	1-102-973-00		100PF	5%	50V
	1-247-831-00	CARBON	1K	5%	1/6W							
	1-247-831-00	CARBON	1K	5%	1/6W		CO12	1-161-013-00	CERAMIC	0.01MF	10%	25 <b>V</b>
	1-247-831-00	CARBON	1K	5%	1/6W		CO13	1-161-013-00	CERAMIC	0.01MF	10%	25 V
	1-249-437-11	CARBON	47K	5%	1/6W		C014	1-161-013-00		0.01MF	10%	25 V
							CO15	1-161-974-00	CERAMIC	0.1MF	20%	16V
R802	1-247-841-00	CARBON	2.7K	5%	1/6W		C016	1-161-013-00	CERAMIC	0.01MF	10%	25V ,
	1-249-437-11	CARBON	47K	5%	1/6W							
R804	1-249-437-11	CARBON	47K	5%	1/6W		CO17	1-161-974-00		0.1MF	20%	16V
	1-247-831-00	CARBON	1K	5%	1/6W	1	C018	1-161-013-00	CERAMIC	0.01MF	10%	25 V
R806	1-247-869-00	CARBON	39K	5%	1/6W	ľ	CO19	1-161-013-00		0.01MF	10%	25V
							C020	1-161-013-00		0.01MF	10%	25 V
	1-247-841-00	CARBON	2.7K	5%	1/6W	1	C021	1-161-013-00	CERAMIC	0.01MF	10%	25 <b>V</b>
	1-249-437-11	CARBON	47K	5%	1/6W	•					5.60	2514
	1-249-437-11	CARBON	47K	5%	1/6W		C024	1-161-059-00		0.047MF	10%	25V
R810	1-247-807-00	CARBON	100	5%	1/6W		C025	1-123-611-00		1MF	20%	50V
R811	1-247-867-00	CARBON	33K	5%	1/6W		C026	1-102-129-00		0.01MF	10%	50V
							C027	1-102-965-00		39PF	5%	50V
	1-247-841-00	CARBON	2.7K	5%	1/6W		C028	1-102-965-00	CERAMIC	39PF	5%	50V
R814	1-249-434-11	CARBON	27K	5%	1/6W	·	coso	1 102 120 00	CEDANIC	0.0195	100	50V
						.	CO29 CO30	1-102-129-00		0.01MF 100PF	10% 5%	50V 50V
	-						CU30	1-102-973-00	CERMITIC	10011	3.6	30 4

### **RP-25D**

Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description	<u>-</u>			Remark
C032 C033	1-123-618-00 1-161-013-00	ELECT CERAMIC	22MF 0.01MF	20% 10%	6.3V 25V		TRA	NSISTOR				
C036	1-123-611-00	ELECT	1MF	20%	50V	0001	8-729-117-54	TRANSISTOR	2SA1175			
C042	1-161-059-00	CERAMIC	0.047MF	10%	25V	Q002	8-729-117-54	TRANSISTOR	2SA1175	•		
C043	1-161-013-00	CERAMIC	0.01MF	10%	25V	Q200	8-729-353-52	TRANSISTOR			,	
					0511	0201	8-729-603-50	TRANSISTOR				
C044	1-161-013-00	CERAMIC	0.01MF	10%	25V 25V	0202	8-729-603-50	TRANSISTOR	23C4U33P			
C045	1-161-013-00	CERAMIC CERAMIC	0.01MF 0.1MF	10% 20%	16V	Q203	8-729-603-50	TRANSISTOR	2SC403SP			
C050 C051	1-161-974-00 1-161-974-00	CERAMIC	0.1MF	20%	16V	0204	8-729-603-50	TRANSISTOR				
C051	1-161-025-00	CERAMIC	0.1MF	10%	25V	0205	8-729-245-83	TRANSISTOR				
0033	1-101 025 00	02				0206	8-729-245-83	TRANSISTOR				
C054	1-161-025-00	CERAMIC	0.1MF	10%	25V	Q207	8-729-900-36	TRANSISTOR	DTC124ES			
C200	1-161-059-00	CERAMIC	0.047MF	10%	25V	0000	0 700 000 60	TOANCICTOD	DIALOASS			
C202	1-123-647-00	ELECT	47MF	20%	6.3V	Q208 Q213	8-729-900-63 8-729-245-83	TRANSISTOR TRANSISTOR				
C203	1-161-059-00	CERAMIC	0.047MF	10% 10%	25V 25V	2214	8-729-900-65	TRANSISTOR				
C204	1-161-059-00	CERAMIC	0.047MF	10%	234	0215	8-729-900-83	TRANSISTOR				
C205	1-161-059-00	CERAMIC	0.047MF	10%	25V	4213	0 /23 300 00					
C206	1-123-618-00	ELECT	22MF	20%	6.3V		RES	ISTOR				
C207	1-161-059-00	CERAMIC	0.047MF	10%	25V			040004	104	ra	1.(6)	
C208	1-102-963-00	CERAMIC	33PF	5%	50V	R001	1-247-861-00	CARBON	18K	5%	1/6W	
C209	1-123-617-00	ELECT	10MF	20%	16V	R002	1-247-863-00	CARBON CARBON	22K 22K	5% 5%	1/6W 1/6W	
		C) COT	OOME	20%	6.3V	R003 R004	1-247-863-00 1-247-863-00	CARBON	22K	5%	1/6W	
C210	1-123-618-00	ELECT	22MF 0.047MF	20% 10%	25V	R005	1-247-837-00	CARBON	1.8K	5%	1/6W	
C211 C212	1-161-059-00	CERAMIC CERAMIC	0.01MF	10%	25V	11003	1 217 007 00	0,11,20,1	••••	-,-		
C212	1-161-013-00	CERAMIC	0.01MF	10%	25V	R006	1-249-437-11	CARBON	47K	5%	1/6W	
C214	1-161-013-00	CERAMIC	0.01MF	10%	25V	R009	1-247-863-00	CARBON	22K	5%	1/6W	
0.2.						R010	1-247-863-00	CARBON	22K	5%	1/6W	
	_ CON	INECTOR				R011	1-247-863-00	CARBON	22K	5%	1/6W	
						R012	1-247-861-00	CARBON	18K	5%	1/6W	
	*1-560-896-00	PIN, CONNEC				R013	1-247-837-00	CARBON	1.8K	5%	1/6W	
	*1-560-895-00	PIN, CONNECT				R014	1-249-437-11	CARBON	47K	5%	1/6W	
	*1 -564-008-00 *1 -560-890-00	PIN, CONNEC				R015	1-247-863-00	CARBON	22K	5%	1/6W	
	*1-564-002-00	PIN, CONNEC				R016	1-247-863-00	CARBON	22K	5%	1/6W	
011003	1 00 002 00					R017	1-249-419-11	CARBON	1.5K	5%	1/6W	
	*1 -564-031-00	PIN, CONNEC				2010	1 040 410 11	CAODON	1 64	EW	1/611	
CN007	*1 -564-003-00	PIN, CONNEC	TOR 4P			R018	1-249-419-11	CARBON CARBON	1.5K 22K	5% 5%	1/6W 1/6W	
	10					R019 R020	1-247-863-00 1-249-434-11	CARBON	27K	5%	1/6W	
	IC					R021	1-247-813-00	CARBON	180	5%	1/6W	
1,0001	8-752-003-40	TC CX20034				R022	1-247-807-00	CARBON	100	5%	1/6W	
10001	0-752-005-40	to oncoor										
	CO1	I L				R023	1-247-807-00	CARBON	100	5%	1/6W	
		_				R029	1-249-429-11	CARBON	10K	5%	1/6W	
L001	1 -408-409-00					R036	1-247-777-00	CARBON	5.6	5%	1/6₩ 1/6₩	
L002	1-408-423-00	MICRO INDUC				R037	1-247-863-00 1-247-863-00	CARBON CARBON	22K 22K	5% 5%	1/6W	
L003	1-408-413-00	MICRO INDUC	TOR 220H			R038	1-247-003-00	CARDUN	221	3,6	1/0#	
L 004 L 005	1-408-409-00 1-408-409-00	MICRO INDUC				R039	1-247-821-00	CARBON	390	5%	1/6W	
L005	1-400-409-00	MICKO INDOC	10K 100H			R041	1-247-851-00	CARBON	6.8K		1/6W	
L006	1-408-411-00	MICRO INDUC	TOR 15UH			R042	1-247-843-00	CARBON	3.3K	5%	1/6W	
L007	1-408-411-00	MICRO INDUC				R052	1-247-863-00	CARBON	22K	5%	1/6W	
L008	1-408-413-00	MICRO INDUC	TOR 22UH			R053	1-247-807-00	CARBON	100	5%	1/6W	
L201	1-408-413-00	MICRO INDUC				DOS.4	1 247 027 00	CADDON	680	5%	1/6W	
L202	1-408-411-00	MICRO INDUC	TUR 15UH			R054 R056	1-247-827-00 1-247-823-00	CARBON CARBON	470	5%	1/6W	
1 202	1 400 076 00	MICRO INDUC	TOP 0 19114			R200	1-247-853-00	CARBON	8.2K	5%	1/6W	
L203	1-408-876-00	MICKO INDUC	10V 0*100H			R201	1-247-841-00	CARBON	2.7K	5%	1/6W	
						R202	1-247-811-00	CARBON	150	5%	1/6W	

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

# RP-25D PW-9A HP-11A FU-33A VJ-1A

CNJ401 1-507-833-00 JACK (HEADPHONE)

	Ref.N	lo Part No.	Description				Remark	Ref.N	No Part No.	Descript	ion			Remark
	R203	1-247-831-00		1K		1/6W			*1-615-717-11	FU-33A 8	OARD			
	R204	1-247-845-00	CARBON	3.9K		1/6W				*****				
	R 205	1-247-823-00	CARBON	470	5%	1/6W			*3-674-372-00	HOLDER (	A), LED			
į.	R206 R207	1-247-837-00 1-247-831-00	CARBON	1.8K		1/6W								
•			CARBON	1K	5%	1/6W			DI	ODE				
	R208	1-247-833-00	CARBON	1.2K		1/6W		D201	8-719-812-33	DIODE TL	G123A (	· )		
	R209	1-249-419-11	CARBON	1.5K		1/6W		D202	8-719-812-32	DIODE TL	Y123 (►			
	R210	1-247-807-00	CARBON	100	5%	1/6W		D204	8-719-812-30			/M()		
	R211	1-247-831-00	CARBON	1K	5%	1/6W		D205	8-719-812-32	DIODE TL				
	R212	1-247-867-00	CARBON	33K	5%	1/6W			TRA	ANSISTOR				
	R213	1-247-859-00	CARBON	15K	5%	1/6W								
	R214		CARBON	560	5%	1/6W		0202	8-729-900-45	TRANSIST	OR DTC114	EF		
	R215	1-247-821-00	CARBON	390	5%	1/6W		0203	8-729-900-45	TRANSIST				
	R216	1-247-823-00	CARBON	470	5%	1/6W		Q204	8-729-900-45					
	R219	1-247-823-00	CARBON	470	5%	1/6W		Q205		TRANSIST				
	R301	1-247-807-00	CARBON	100	5%	1/6W			RES	SISTOR				
		VAR	IABLE RESISTOR	3				R201	1-247-837-00	CARBON	1.8	K 5%	1/6W	
	D.11004							R202	1-249-421-11	CARBON		5%	1/6W	
	K A001	1-228-920-00	RES, ADJ, CAR	RBON 2.	2K			R203	1-247-843-00	CARBON		< 5%	1/6W	
	R V002	1-228-920-00	RES, ADJ, CAR	RBON 2.	2K			R204	1-247-847-00	CARBON	4.7		1/6W	
		1-228-994-00	RES, ADJ, CAR	RBON 101	K			R205	1-247-853-00	CARBON	8.2		1/6W	
		1-228-994-00	RES, ADJ, CAR										-,	
	K ¥200	1-228-920-00	RES, ADJ, CAR	(BON 5.2	ZK			R206	1-247-859-00		15K	5%	1/6W	
	****	******	*****	*****	****	*****		R209	1-247-817-00	CARBON	270	5%	1/6W	
								R210	1-247-817-00	CARBON	270	5%	1/6W	
		*1-615-714-11	PU_QA ROADO					R211	1-247-817-00	CARBON	270	5%	1/6W	
			******					R212	1-247-817-00	CARBON	270	5%	1/5W	
		*3-689-521-01	HOLDER, LED,	ROUND					SWI	TCH				
		DIO	DE					S201 S202	1-554-174-00 1-554-174-00		EY BOARD	( <b>      </b>	۱ ا	
								\$203	1-554-174-00	SWITCH, K	EY BOARD	( 🙀 )		
	D301	8-719-812-33	DIODE TLG123A	(POWER	₹)			S204	1-554-174-00	SWITCH, K	EY BOARD			
	D302	8-719-812-32	DIODE TLY123	(▲)				\$205	1-554-174-00	SWITCH, K				
	** *	RESI	STOR					S206	1-554-174-00	SWITCH. K	EY BOARD	(44)		
	D 2 01						1	5207	1-554-174-00	SWITCH, K	EY BOARD			
	R301	1-247-817-00			5%	1/6W		S208	1-554-174-00	SWITCH, K	EY BOARD	(X2)		
	R302	1-247-817-00	CARBON	270	5%	1/6W		******	******	******	*****	*****	****	
		-	ABLE RESISTOR						*1-615-715-11	V2 14 DO4	00			
	RV301	1-228-988-00	RES, VAR, CARE	BON 10K	/10K	(PHONE L	EVEL)		1-013-713-11	******			4	
	'	SWIT	СН						JACK	<u> </u>				
	S301	1-554-174-00	SWITCH, KEY BO	DARD (P	OWER)			M1601	1-562-808-11	JACK (MIC	1.1			
	S302	1-554-174-00	SWITCH, KEY BO	DARD (	<b>(</b>			MJ602	1-562-808-11	JACK (MIC	R)			
	*****	******	******	*****	****	*****	*****		VARI	ABLE RESI	STOR			
	1	*A-706-014-8A	HP-11A BOARD.	COMPLE	TE			RV601	1_230_200 11	DEC MAD	CLIDE 10	,		
			******				ļ	RV602	1-230-809-11 1-230-811-11	RES. VAR	SLIDE 10	(		
		JACK								rnk,	JEIDE 10	`		
		311011					- 1							

When indicating parts y reference number, please include

LS-9 TE	-1A TE-2A LD-1	RS	-11A	MS-4	PS-8	4A/B
Ref.No Part No.	Description Rem	rk . Ref.N	No Part No.	Description	n .	Re
	LS-9 BOARD	_			<del>-</del>	
	******			MS-4 BOARD		
<u>CO</u>	NNECTOR			CAPACITOR		
CN904 *1-564-613-21	PIN, CONNECTOR (HOOK TYPE)	C902		OO CERAMIC CHI	IP 0.1MF	25V
*****	***************************************	****	******	*****	*****	*****
*1-615-316-11	TE-1A BOARD		*A-7070-117	-A PS-84A BOAF	RD. COMPLETE	(AFP MODEL)
*3-689-011-01	HOLDER, SENSOR			-A PS-84B BOAF		
RE:	SISTOR		1-533-162-	00 HOLDER, FUS	SF	
0004 8-729-700-08	NJL7141E		<u>^</u> .2-430-344- <u>^</u> .3-691-946-	O1 COVER (CC-1 O1 COVER, SQUA OO HEAT SINK,	017), INSULA	
******	***************************************	**		CAPACITOR		
*1-615-317-11	TE-2A BOARD	C1 01	<u>^</u> .1-130-710-	11 FILM	0.1MF	20% 250V
*3-689-011-01	HOLDER, SENSOR	C105 C106	1-123-356- 1-123-380-		10MF 1MF	20% 16V 20% 50V
REI	AY	C107 C109	1-123-349- 1-123-380-		1000MF 1MF	20% 35V 20% 50V
— PL001 1-518-575-21	LAMP, PILOT	C110	<u>A</u> .1-161-742-	51 CERAMIC	2200PF	20% 400 <b>v</b>
PL002 1-518-575-21	LAMP, PILOT	C111	<u>^</u> .1-161-742-	52 CERAMIC	2200PF	(AEP MODE 20% 400V
. TR/	ANSISTOR	C112	<u>A.1-161-742-</u>	51 CERAMIC	2200PF	(AEP MODE 20% 400V
2003 8-729-700-08	NJL7141E	C113	1-123-371-0	00 ELECT	22MF	(AEP MODE 20% 63V
SW	тсн	C114	1-123-371-		22MF	20% 63V
5001 1-553-226-00	SWITCH, LEAF (CASSETTE IN)	C115 C116	1-123-346-0		220MF 220MF	20% 35V 20% 35V
*******	**********************	** C117	1-123-375-6 A.1-161-742-	00 ELECT	220MF 2200PF	20% 63V 20% 400V
1-613-367-11	LD-1 BOARD	0110	<u>/1)</u> . 1 - 1 0 1 - 7 + 2 -	JI CENAMIC	220011	(AEP MODE
DIC	nne		<u>(</u>	CONNECTOR		
0001 8-719-912-46				OO PIN, CONNEC		
******	***********	**	_[	DIODE		
*1-615-309-11		D102	8-719-911-1			
	******	D103 D104	8-719-100-4		EB2	
	HOLDER, REEL SENSOR	D106 D107	8-719-982-0 8-719-982-0			
DIO	<u>DDE</u>	D108	8-719-815-8	35 DIODE 15158	5	
PH001 8-719-751-42 PH002 8-719-751-42 PH003 8-719-751-42		D109 D112 D113 D115	8-719-815-8 8-719-815-8 8-719-815-8	35 DIODE 15158 35 DIODE 15158	5 5 5	

The components identified by shading and mark  $\underline{A}$  are critical for safety. Replace only with part number specified.

## PS-84A/B PS-85A

Ref.No Part No.	Description		Remark	, Ref.	lo Part No.	Description	<u>n</u>		Remark
FU				CN209	*1-564-031-00 *1-560-894-00	PIN, CONNE	CTOR 6P		
FI 01 A.1-532-235-11	FUSE, TIME-LAG T315MA	2	50V	CN211	*1-560-890-00	PIN, CONNE	CTOR 2P		
	LINK				DI	ODE			
PS1 01 <u>A</u> .1-532-605-11 PS1 02 <u>A</u> .1-532-675-21	LINK, IC (ICP-N15) (AE LINK, IC (ICP-N10) (UK LINK, IC (ICP-N38) LINK, IC (ICP-F38)	P MODEL)		D201 D202 D203 D204 D205	8-719-500-09 8-719-100-58 8-719-100-58 8-719-100-39 8-719-200-02	DIODE RD108	EB3 EB3 2EB3		
TRA	ANSISTOR								
	TRANSISTOR 2SB1015 TRANSISTOR 2SC2785			D206 D207 D208 D209	8-719-200-02 8-719-911-19 8-719-911-19 8-719-100-58	DIODE 1SS11 DIODE 1SS11	19 19		
RES	SISTOR			D210	8-719-100-58				
R104 1-249-429-11 R105 1-247-149-00 R111 1-249-429-11 R120 4.1-212-944-51	CARBON 5.6K 5% CARBON 10K 5%	1/6W 1/4W 1/6W 1/2W		D211 D212 D213 D214	8-719-911-19 8-719-911-19 8-719-100-38 8-719-100-44	DIODE 1SS11 DIODE RD6.2	9 2EB2		
TRA	ANSFORMER				FUS	<u>SE</u>			
T1 02 <u>A</u> .1-421-357-31	TRANSFORMER, LINE FILTE	R .		F201 /	↑.1-532-259-11	FUSE, TIME-	LAG T1.	6A	25 OV
THE	RMISTOR			FZUZ [	1-532-203-11	FUSE, TIME-	LAG TZ.	QA .	25 OV
TH1 01▲.1-806-886-11	THERMISTOR (POSITIVE) 1	0			īc				
	PS-85A BOARD, COMPLETE	*****	******	1C201 1C202	8-759-801-26 8-759-700-08	IC L78M06 IC NJM4558S LINK			
1-533-162-00	HOLDER, FUSE			PS201/	1-532-605-11		CP_N1 0)		
CAP	ACITOR			PS2 02/	1-532-727-11 1-532-727-11	LINK. IC (I	CP-N5)		
C201 1-123-333-00	ELECT 100MF	20%	25 V	PS204/	1-532-727-11 1-532-675-00	LINK. IC (I	CP-N5)	建设的设计多种型	and some of the sound of the sound of
C203 1-123-306-00 C204 1-125-298-00 C205 1-123-333-00		20% 20% 20%	10V 25V 16V			NSISTOR			
C207 1-123-333-00		20%	16V	Q201 Q202	8-729-201-78 8-729-201-78	TRANSISTOR :	2SD1406 2SD1406		
C209 1-123-319-51 C211 1-125-347-00 C212 1-123-337-00 C214 1-123-356-00	DOUBLE LAYERS 0.22 ELECT 1000MF ELECT 10MF	20% 20% 20%	16V 5.5V 25V 16V	0203 0204 0205	8-729-178-54 8-729-201-78 8-729-178-54	TRANSISTOR :	2SC2785 2SD1406		*
C216 1-123-332-00	ELECT 47MF	20%	25V	Q206 A	8-729-201-78 -8-729-201-78	TRANSISTOR 2	2SD1406	(UK MODE	L)
C217 1-123-332-00 C218 1-123-319-51 C220 1-123-319-51	ELECT 47MF	20% 20% 20%	25V 16V 16V	Q207 Q207 <u>A</u> Q210	8-729-202-02 8-729-202-02 8-729-177-32	TRANSISTOR 2 TRANSISTOR 2 TRANSISTOR 2	2SB1 01 5 2SB <b>1 01 5</b> 2SD773	(AEP MODE	EL)
, <u>CON</u>	NECTOR			Q211 Q212	8-729-900-61 8-729-900-89	TRANSISTOR I			
CN201 *1-560-890-00 CN203 *1-560-891-00 CN206 *1-560-890-00 CN207 *1-560-895-00	PIN, CONNECTOR 7P			Q213 Q214	8-729-177-33 8-729-113-33 RESI	TRANSISTOR 2 TRANSISTOR 2	2SD773-4 2SB733-4		
CN2O8 *1-560-892-00	PIN, CONNECTOR 4P			R201	1-247-831-00		1K	5% 1/	/6W

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please in clude the board name.

## PS-85A PS-86A PS-87A

							•	
Ref.No Part No.	Description			*	Remark	Ref. No Part No.	Description Remark	k
R202 1-247-829-00		820	5%	1/6W		TRA	ANSISTOR	
R203 1-247-825-00 R204 1-247-833-00		560 1.2K	5% 5%	1/6W 1/6W		0402 8-729-177-32	TRANSISTOR 2SD773	
R205 1-247-829-00	CARBON	820	5%	1/6W		4102 0 723-177-32	MANS1310N 230//3	
R206 1-247-700-11	CARBON	100	5%	1/4W		************	************	*
R209 1-247-829-00		820	5%	1/6W			SCELLANEOUS	
R210 1-247-829-00 R212 1-249-421-11		820 2.2K	5% 5%	1/6W 1/6W		***	******	
R213 1-247-821-00		390	5%	1/6W		A-7090-029-A	M-SW ASSY	
R214 1-247-767-00	CARBON	2.2	5%	1/6W		1-464-470-11	BOOSTER MIXER, RF MODULATOR (RFU-830)	
R215 1-247-841-00		2.7K		1/6W		A.1-464-471-11	BOOSTER MIXER, RF MODULATOR (RFU-831)	).
R216 1-247-843-00 R217 1-247-767-00		3.3K	5%	1/6W			(AEP MODEL)	
R217 1-247-767-00 R219 <u>A</u> -1-212-849-51		2.2	5% 5%	1/6W	Fer Maria	A.1-534-817-31 A.1-551-884-32	CORD, POWER (AEP MODEL)	
R220 1-247-704-11		220	5%	1/4W	* N + 30 A	M.1-351-664-32	CORD, POWER (UK MODEL)	į
R221 1-247-847-00	CARBON	4.7K	5%	1/6W		1-535-535-11		
R222 1-247-697-11		56	5%	1/4W		*1-555-110-00 C901 1-161-073-11	CABLE, PIN CAP, CERAMIC 0.033MF	
R223 1-247-831-00	CARBON	1K	5%	1/6W		M902 8-838-094-01	MOTOR, DC (BHF-2800C) (CAPSTAN)	
R223 A.1-247-831-00	CAPRON	1 K	(AEP	MODEL)	The Control			4
		11		1/6W MODEL)		M903 8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL)	
R224 A.1-247-855-00	CARBON	1 OK	5%	1/6W		M904 AA-7090-030-A	MOTOR ASSY, L (LOADING)	
R224 A.1-247-855-00	CARBON	1 OK	5%	MODEL)		PM901 <u>A</u> .1-454-377-11 S901 1-554-942-11		1
		IUN		MODEL)		S902 1-554-942-11	SWITCH, PUSH (RECOG R) SWITCH, PUSH (RECOG L)	
DOOF A 1 047 OFF OO								
R225 A 1-247-855-00	CARBON	1 OK	5%	1/6W		TI 01 A.1-448-236-11	TRANSFORMER POWER	
R225 A. 1-247-855-00		1 0K		1/6W MODEL) 1/6W		T1 01 A.1-448-236-11	TRANSFORMER, POWER	
			(AEP	MODEL)		T1 01 <u>A</u> .1-448-236-11	TRANSFORMER, POWER	*
	CARBON		(AEP	MODEL) 1/6W		**************************************	**************************************	*
R225 <u>A</u> . 1-247-855-00	CARBON	1 OK	(AEP 5% (UK I	MODEL) 1/6W MODEL)		**************************************	************	*
R225 <u>A</u> . 1-247-855-00 R230 1-247-807-00 <u>TH</u>	CARBON  CARBON  ERMISTOR	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)		**************************************	ESSORYS AND PACKING MATERIALS ************************************	*
R225 <u>A</u> . 1-247-855-00	CARBON  CARBON  ERMISTOR	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	•	**************************************	ESSORYS AND PACKING MATERIALS ************************************	*
R225 <u>A</u> . 1-247-855-00 R230 1-247-807-00 <u>TH</u>	CARBON  CARBON  ERMISTOR	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)		**************************************	ESSORYS AND PACKING MATERIALS ***********  COMMANDER ASSY (RMT-405)  CORD, CONNECTION  CABLE, COAXAL ASSY	*
R225 A.1-247-855-00 R230 1-247-807-00 TH TH201 A.1-806-883-11	CARBON  CARBON  ERMISTOR  THERMISTOR (PO	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)		**************************************	ESSORYS AND PACKING MATERIALS ************************************	*
R225 <u>A</u> . 1-247-855-00 R230 1-247-807-00 <u>TH</u>	CARBON  CARBON  ERMISTOR  THERMISTOR (PO	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  ***********  COMMANDER ASSY (RMT-405)  CORD, CONNECTION  CABLE, COAXAL ASSY  CORD ASSY COAXIAL	*
R225 A. 1-247-855-00 R230 1-247-807-00  TH TH201 A. 1-806-883-11  **********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT)	*
R225 A.1-247-855-00 R230 1-247-807-00 TH TH201 A.1-806-883-11 ***********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	•	**************************************	ESSORYS AND PACKING MATERIALS  ************  COMMANDER ASSY (RMT-405)  CORD, CONNECTION  CABLE, COAXAL ASSY  CORD ASSY COAXIAL  INDIVIDUAL CARTON  CUSHION (REAR)  CUSHION (FRONT)  DRIVER, VOLUME	*
R225 A. 1-247-855-00 R230 1-247-807-00  TH TH201 A. 1-806-883-11  **********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)		**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT)	*
R225 A.1-247-855-00 R230 1-247-807-00 TH TH201 A.1-806-883-11 ***********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION	*
R225 A.1-247-855-00 R230 1-247-807-00  TH TH201 A.1-806-883-11  *****************  *1-616-185-11  IC IC301 A.8-749-953-62	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION (ENGLISH)	*
R225 A.1-247-855-00 R230 1-247-807-00 TH TH201 A.1-806-883-11 ***********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	**************************************	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION	*
R225 A.1-247-855-00 R230 1-247-807-00  TH TH201 A.1-806-883-11  ****************  *1-616-185-11  IC IC301 A.8-749-953-62  ***********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION (ENGLISH) MANUAL, INSTRUCTION (AEP MODEL) (FRENCH, GERMANY DETCH)  MANUAL, INSTRUCTION (AEP MODEL)	*
R225 A.1-247-855-00 R230 1-247-807-00  TH TH201 A.1-806-883-11  *****************  *1-616-185-11  IC IC301 A.8-749-953-62	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION (ENGLISH) MANUAL, INSTRUCTION (AEP MODEL) (FRENCH, GERMANY DETCH)	*
R225 A.1-247-855-00 R230 1-247-807-00  TH TH201 A.1-806-883-11  *************  *1-616-185-11  IC IC301 A.8-749-953-62  ***********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION (ENGLISH) MANUAL, INSTRUCTION (AEP MODEL) (FRENCH, GERMANY DETCH)  MANUAL, INSTRUCTION (AEP MODEL)	*
R225 A.1-247-855-00 R230 1-247-807-00  TH TH201 A.1-806-883-11  *************  *1-616-185-11  IC IC301 A.8-749-953-62  ***********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)	*****	**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION (ENGLISH) MANUAL, INSTRUCTION (AEP MODEL) (FRENCH, GERMANY DETCH)  MANUAL, INSTRUCTION (AEP MODEL)	
R225 A.1-247-855-00  R230 1-247-807-00  TH  TH201 A.1-806-883-11  ******************  *1-616-185-11  IC  IC301 A.8-749-953-62  ***********************************	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)		**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION (ENGLISH) MANUAL, INSTRUCTION (AEP MODEL) (FRENCH, GERMANY DETCH)  MANUAL, INSTRUCTION (AEP MODEL)	*
R225 A.1-247-855-00 R230 1-247-807-00  TH TH201 A.1-806-883-11  ****************  *1-616-185-11  IC IC301 A.8-749-953-62  ***********************  *1-616-186-11  D10 D401 8-719-100-69 D402 8-719-911-19  IC	CARBON  CARBON  ERMISTOR  THERMISTOR (PO  ***********************************	10K 100	(AEP 5% (UK ) 5%	MODEL) 1/6W MODEL)		**************************************	ESSORYS AND PACKING MATERIALS  COMMANDER ASSY (RMT-405) CORD, CONNECTION CABLE, COAXAL ASSY CORD ASSY COAXIAL INDIVIDUAL CARTON  CUSHION (REAR) CUSHION (FRONT) DRIVER, VOLUME BAG, POLYETHYLENE  MANUAL, INSTRUCTION (ENGLISH) MANUAL, INSTRUCTION (AEP MODEL) (FRENCH, GERMANY DETCH)  MANUAL, INSTRUCTION (AEP MODEL)	*

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

# SECTION 7 ADJUSTMENTS

## 1. MECHANICAL CHECK, ADJUSTMENT AND PREPARATIONS FOR REPLACEMENT

Note: Regarding the removal procedures of the cabinet and board, see Section 2.

## 1-1. CASSETTE COMPARTMENT ASSEMBLY AND OPERATION WITHOUT TAPE INSERTED

Note: The set will not operate if there is a strong light source near it.

#### 1. Loading

- 1) Remove the front panel and covers (upper, lower) according to item 1-1.
- Connect a power supply and press the power button to turn on.
- 3) Press the EJECT button.
- 4) Disconnect power supply.
- According to item Section 2, 2-3, remove the cassette compartment assembly. (Do not disconnect connector CN20 (white) 5P.)
- 6) Place tape over the pin coming out of the push switch 2.
- Connect power supply and press the power button to turn on.
- 8) Press door gear coupling plate (3) in the direction of arrow(a) (Refer to Fig. 1-1)

#### 2. Putting into Playback State

- 1) Perform the loading procedure in 1.
- Place the rubber band as shown between S reel and T reel sides.
- 3) Place a cap 6 over the LED assembly.
- 4) Press the playback button, and when the T reel side starts to rotate, press the tension regulator arm assembly 6 in the direction of arrow 8. (At this time, the tension regulator band is released and the S reel side rotates.)
- 5) Press the stop button to stop. (Fig. 1-1)

## 3. Putting into Recording State

- 1) Perform the loading procedure in 1.
- 2) Place a rubber band **4** as shown between the S reel and T reels.
- 3) Place a cap 6 over the LED assembly.
- 4) Press the recording button, and when the T reel side starts to rotate, push the tension regulator arm assembly 6 in the direction of arrow. 8. (At this time, the tension regulator band is released and the S reel side rotates.)
- 5) Press the stop button to stop (Fig. 1-1)

#### 4. Eject

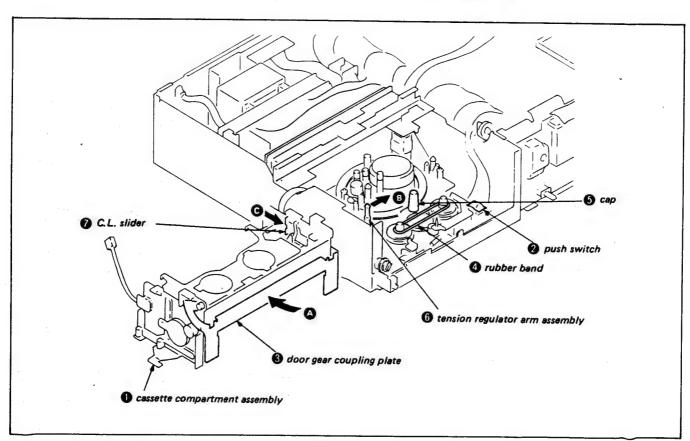


Fig. 1-1.

#### 1-2. HANDLING OF MODE SELECTOR

#### 1. Location of Parts (exterior)

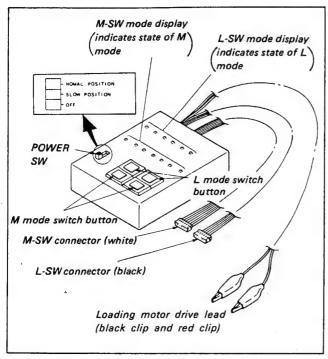


Fig. 1-2

#### 2. Connection

- 1) Remove the two connectors 1 on the SS-38F board.
- Remove the MD-8D board 2 according to item Section 2, 2-8.
- 3) Insert the M-SW connector (6P connector, 6 harness, white) 3 into the set MS-4 board.
- 4) Insert the L-SW connector (6P connector, 4 harness, black)

  4 into the set LS-9 board.
- 5) Connect the loading motor drive lead **5** red lead side to the loading motor red clip and the brown lead to the black clip. (Fig. 1-3)

#### 3. Caution

- 1) When operating L-SW, be sure to set the M-SW mode to LOADING/UNLOADING.
- When operating M-SW, be sure to set the L-SW mode to TOP or END.

#### 4. Handling

BLANK lighs up regardless of L MODE or M MODE when it is in neither mode during select.

#### 1) L MODE

- When the L mode switch button right side is pressed continuously, the display lights up from LOADING TOP → LOADING END, in order from left to right.
- To go from LOADING END—LOADING TOP, press the left button continuously until the desired MODE is reached.
- In slow position, the L mode operates more slowly than for normal position.

#### 2) M MODE

- Set L-SW to LOADING TOP before performing EJECT
- Set L-SW to LOADING END to perform FF/REW→
   RVS or RVS → FF/REW.
- When the right M MODE switch button is pressed continuously, the display lights up from EJECT → RVS in order from left to right.
- To go from RVS—EJECT, press the left side switch button continuously until the desired MODE is reached.

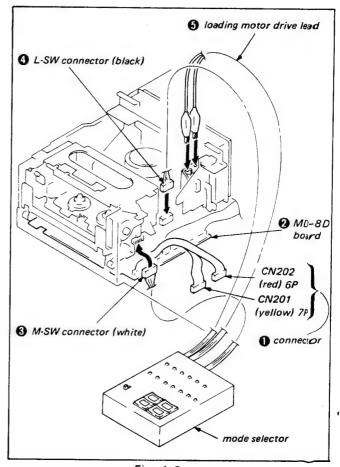
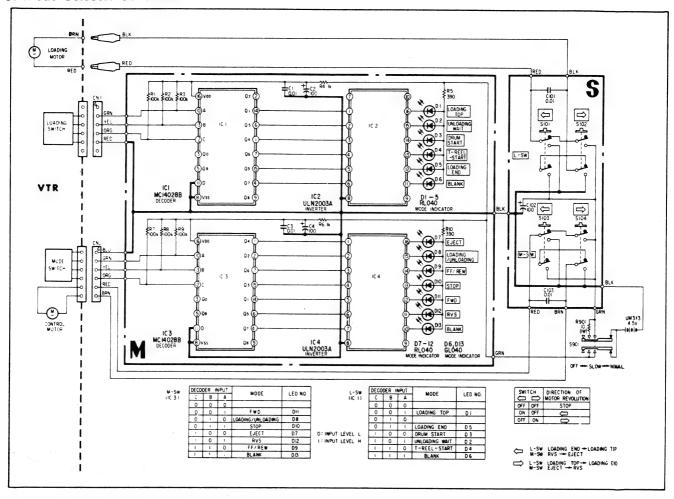


Fig. 1-3.

#### 5. Mode Selector Schematic



## 6. Mode Selector Parts List

O. WIOL	ie Selector Part	S LIST							
Symbol	Part No.	Part Name			Symbol	Part No.	Part Name	9	
	capacito	rs				<u>1C</u>		_ ,	
Cl	1-108-579-00	mylar	0.01 µ F	50 V	101	8-759-240-28	IC	TC 4028B	P
C2	1-123-333-00	electrolytic	100 µ F	24V	IC2	8-759-120-03	- I C	#PA 2003	A
C3	1-1.08-579-00	mylar	0.01μF	50 V	1 C3	8-759-240-28	IC	TC40288	P
C4	1-123-333-00	electrolytic	100 µ F	24 V	IC4	8-759-120-03	I C	μPA 2003	
C101	1-108-579-00	mylar	0.01 µ F	50 V			_		
						resistor			
C103	1-108-579-00	mylar	0.01 µ F	50 V	R1	1-247-179-00	carbon	100K	1/4W
	Diodes				R2	1-247-179-00	carbon	100K	1/4W
	Diodes				R3	1-247-179-00	carbon	100K	1/4W
DI	8-179-812-31	diode	RL 040		R4	1-247-131-00	carbon	1 K	1/4W
D2	8-179-812-31	diode	RL040		R5	1-247-121-00	carbon	390	1/4W
D3	8-179-812-31	diode	RL 040						
D4	8-179-812-31	diode	RL 040		R6	1-247-131-00	carbon	1K	1/4W
<b>D</b> 5	8-179-812-31	diode	RL 040		R7	1-247-179-00	carbon	100K	1/4W
					R8	1-247-179-00	carbon	100K	1/4W
D6	8-719-812-33	diode	GL 040		R9	1-247-179-00	carbon	100K	1/4W
D1	8-179-812-31	diode	RL040		R10	1-247-121-00	carbon	390	1/4W
D8	8-179-812-31	diode	RL 040						
D9	8-179-812-31	diode	RL 040		R901	1-214-594-00	metal film	10	1W
D10	8-179-812-31	diode	RL040						
DII	8-179-812-31	diode	RL040						
D12	8-179-812-31	diode	RL040						
D13	8-719-812-33	diode	GL 040						

## 2. PERIODIC CHECK AND MAINTENANCE

Please perform the following periodic checks and maintenance in order to obtain optimum set function and performance, and to keep the mechanism and tape in good condition. Also, perform the maintenance below after repair, regardless of the length of time the set has been used by the user.

## 2-1. CLEANING OF ROTARY DRUM ASSEMBLY

 Press a chamois cloth (Ref. No. J-2) soaked in cleaning fluid (Ref No. J-1) lightly against the rotary drum assembly, and slowly rotate the rotary upper drum assembly counterclockwise by hand to clean.

**Note:** Do not use the power supply to rotate the motor, and do not rotate the drum clockwise by hand.

Also, there is a danger of damaging the head tip if the chamois cloth is moved vertically relative to the head tip, so please follow the instruction above for cleaning.

## 2-2. CLEANING OF TAPE PATH

 Place the cassette compartment assembly in EJECT state, and clean the tape path (No. 1 ~ No. 11 guides, capstan shaft, pinch roller) with a chamois cloth soaked in cleaning fluid. (See Fig. 2-1)

## 2-3. CLEANING OF DRIVE SYSTEM

 Clean the drive system (timing belt, surface of reel tables) with a chamois cloth soaked in cleaning fluid.

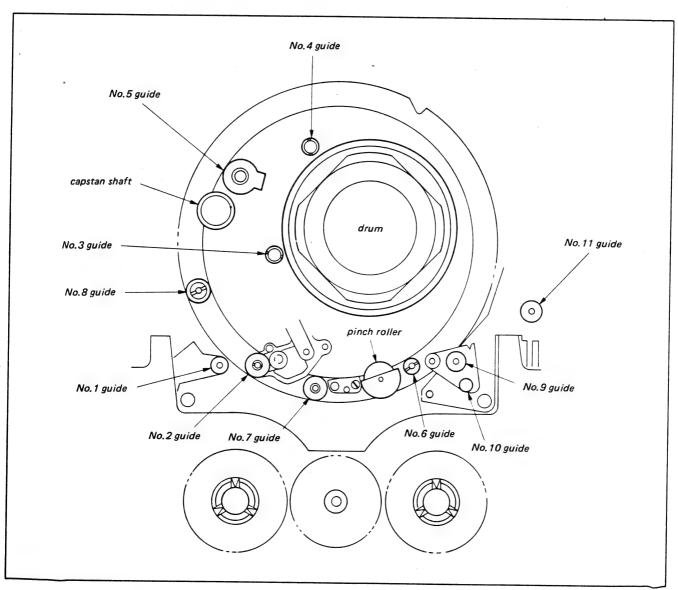


Fig. 2-1.

## 2-4. PERIODIC CHECK

Perform following according to number of hours of use.

	Location		Hours of Use (H)									
			1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Notes
Path	Cleaning of tape path surface	0	С	0	0	0	0	0	0	0	0	Be careful of oil
Tape	Cleaning and degaussing of rotary drum assembly	0	0	0	0	0	0	0	0	0	. 0	Be careful of oil
	L motor belt	0	C	0	0	0	0	0	<b>*</b>	0	0	3-686-546-01 Replace here, or every two years.
E	Timing belt	0	0	0	. 0	0	0	Ö	0	0	0	3-686-646-01
System	Plunger solenoid	_	_	_	0		_		0	_		1-454-377-11
Drive	Capstan shaft bearing		( s		9		0	_	0	_	0	Be careful not to get oil on the tape path surface.
	Loading motor		ţ.	_	☆	_	. ☆	_	☆	_	☆	8-835-121-01
	Control motor		₹	_	☆	_	☆	-	☆	_	☆	8-835-110-01
Check	Abnormal noise	s):	<	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	_	<sup>2</sup> Λ,	_	☆	_	☆	_	☆	_	☆	
man	Brake system	_	\$	_	☆	-	☆	_	☆	_	☆	
Performance	FWD, RVS torque measurement	_	ζ	_	☆		☆		☆	-	☆	

**Note:** When performing an overhaul, refer to the items above when replacing parts.

Note: Sony Oil

- Be sure to use Sony Oil. (There is a danger of trouble occurring if a different viscosity is used.)
   Sony Oil: Parts No. 7-611-088-61 (Mitsubishi Diamond Oil #400)
- Be sure to use clean oil when lubricating the shaft bearing, because there is a danger of wear and burning if dirty oil is used.
- One drop of oil means the amount which sticks to a 2 mm diameter rod, as shown in Fig. 2-2.

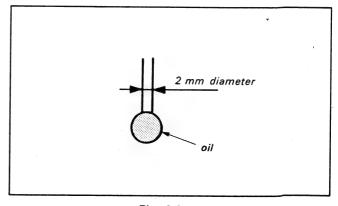


Fig. 2-2.

## 2-5. SERVICE JIG TABLE

Ref. No.	Name	Part No.	Jig .	Use, Notes
J-1	Cleaning fluid	Y-2031-001-1		1 1 1 A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
<b>J-</b> 2	Chamois cloth	2-034-697-00		
<b>J-</b> 3	Head degausser	Commercially sold		
J-4	Small adjustment mirror, spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
<b>J-</b> 5	Alignment tape (WR5-1C)	8-967-995-06		Tape path
<b>J-</b> 6	Dial tension gauge	J-6080-827-A		torque measurement
<b>J-</b> 7	Tension measurement reel	J-6080-831-A		with $\phi$ 30 tape
<b>J-</b> 8	Tension measurement reel	J-6080-832-A		with \$\phi\$16 string
<b>J-</b> 9	No. 10 gear phase jig	J-6080-823-A	GD-2047	
<b>J</b> -10	Rotary drum jig	(packed with the	epair rotary upper d	rum)
<b>J-</b> 11	No. 6 guide lock screwdriver	J-6080-826-A		
<b>J-</b> 12	FWD, RVS winding torque cassette	J-6080-824-A	GD-2089	
<b>J-</b> 13	Mode selector	J-6080-825-A		for all models
J-14	Video head checker	7-732-080-01	SL-5151	

Other equipment: Oscilloscope

Analog tester (20 k $\Omega$ )

7 maiog test	()		
J-1	J-2	J-3	J-4
		200	
J-5	J-6	J-7	J-8
J-9	J-10 (Packed with repair use	rotary upper drum)	J-11
7.10	1.10		
J-12	J-13	J-14	

## 3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

Note: Use the mode selector (Ref No. J-13) for this mechanical check, adjustment and replacement.

The mode inside the \_\_\_\_\_ is the mode set by pressing the mode selector button.

## 3-1. S REEL TABLE ASSEMBLY

#### 1. Removal

- 1) Remove the cassette compartment assembly according to item Section 2, 2-3.
- 2) Set to FF/REW mode.
- 3) Remove screw 1 and reel table stopper 2.
- 4) Remove the REV brake assembly 3.
- 5) Remove the S reel table assembly 4. (Fig. 3-1)

**Note:** Be sure to hold the upper reel hook when removing. (See Fig. 3-1)

- 1) Place a half drop of oil on the shaft 6 upper surface.
- 2) Move the S main brake assembly 6 in the direction of arrow 2.
- 3) Mount the S reel table assembly 4, being careful not to hit the tension regulator band assembly 7.
- 4) Mount the REV brake assembly 3.
- 5) Mount the reel table stopper 2 and tighten with screw 1. (See Fig. 3-1)
- 6) Set to LOADING/UNLOADING mode.
- 7) Mount the cassette compartment assembly by following the procedure in item Section 2, 2-3. in reverse.

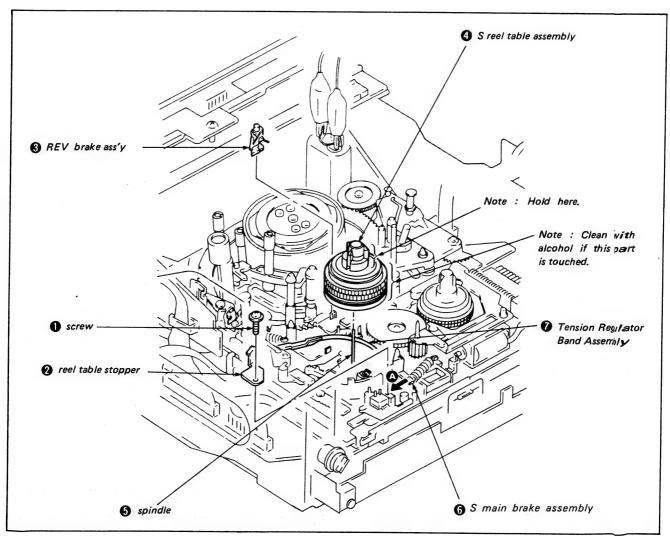


Fig. 3-1.

#### 3-2. T REEL TABLE ASSEMBLY

#### 1. Removal

- 1) Remove the cassette compartment assembly according to item Section 2, 2-3.
- 2) Set to UNLOADING WAIT mode.
- 3) Place the spring 2 on the T.S brake assembly 1 on the hook on the lock slider assembly.
- 4) Remove the stopper washer 3 and the T soft brake assembly 1.
- 5) Set to EJECT mode.
- 6) Move drive gear (B) assembly 4 in the direction of arrow
- 7) Remove T reel table assembly **5**. (See Fig. 3-2)

  Note: Be sure to hold the upper reel hook when removing.

  (See Fig. 3-2).

- 1) Place a half drop of oil on the shaft 6 upper surface.
- 2) Move the drive gear B assembly 4 in the direction of arrow (a) (Check EJECT mode.)
- 3) Mount the T reel table assembly 6.
- 4) Mount the T soft brake assembly 1 and the stopper washer 3.
- 5) Place the spring ② on the T.S brake assembly ① hook. (See Fig. 3-2)
- 6) Set to LOADING TOP. LOADING/UNLOADING mode.
- 7) Mount the cassette compartment assembly by following the procedure in item Section 2, 2-3. in reverse.

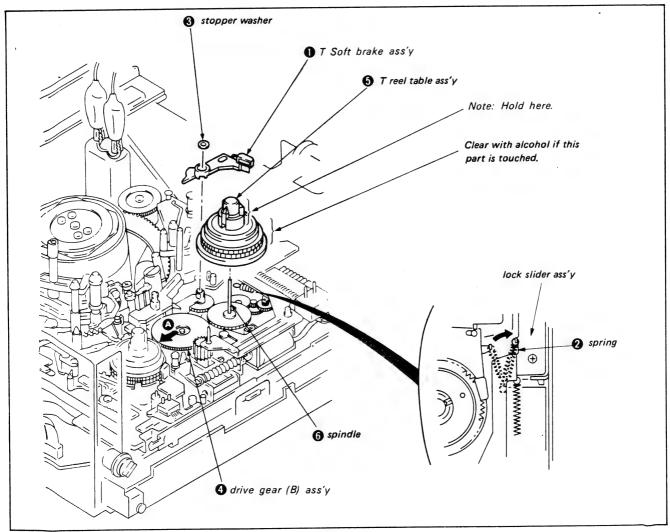


Fig. 3-2.

#### 3-3. PINCH PRESS ARM ASSEMBLY

#### 1. Removal

- 1) Place the spring 1 on the pinch press arm assembly 2.
- 2) Remove the stopper washer 3 and the pinch press arm assembly 2. (See Fig. 3-3)

- 1) Place a half drop of oil on shaft 4.
- 2) Mount the pinch press arm assembly 2 and the stopper washer 3.
- 3) Place the spring ① on the tension regulator spring assembly ③. (See Fig. 3-3)

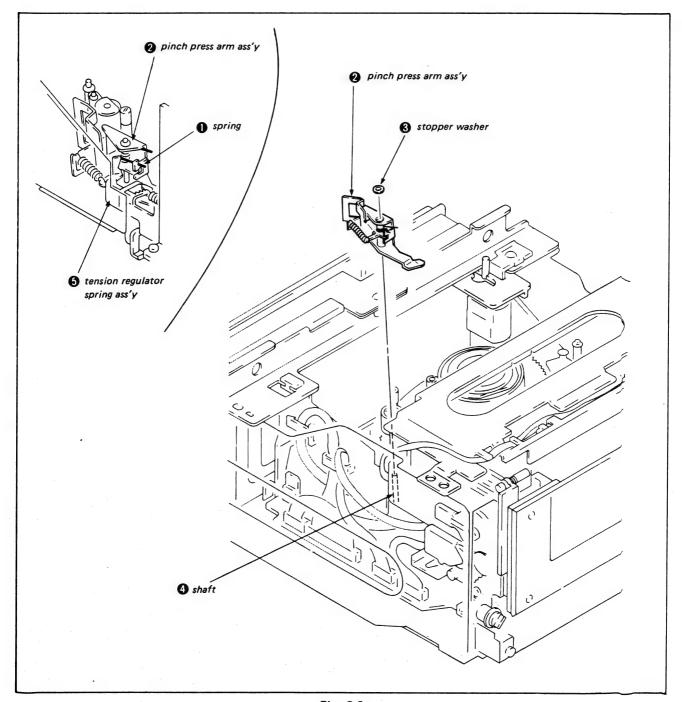


Fig. 3-3.

#### 3-4. TENSION REGULATOR ARM ASSEMBLY

#### 1. Removal

- 1) Remove the cassette compartment assembly according to item Section 2, 2-3.
- 2) Change the spring position as described in 3.3, 1. Removal,1). (See Fig. 3-3)
- 3) Remove spring **1**. (Note its position.)
- 4) Remove screw 2 and the tension regulator spring assembly 3.
- 5) Set to FF/REW mode.
- 6) Remove the tension regulator band assembly hook 4.
- 7) Remove the tension regulator arm assembly **5**. (See Fig. 3-4)

- 1) Place a half drop of oil on the shaft 6.
- 2) Mount the tension regulator arm assembly **5**, placing the tension regulator load arm assembly pin **7** in the tension regulator arm assembly **6** cam groove (on the back).
- 3) Mount the tension regulator band assembly hook 4. (Do not touch the band or change its shape.)
- 4) Set to LOADING/UNLOADING mode.
- Mount the tension regulator spring assembly 3 and tighten with screw 2.
- 6) Replace spring 1 in its original position and lock the screws. (See Fig. 3-4)
- 7) Position the spring according to item 3.3, 2. Mounting, 3). (See Fig. 3-3)
- 8) Mount the cassette compartment assembly by following the procedure in item Section 2, 2-3. in reverse.

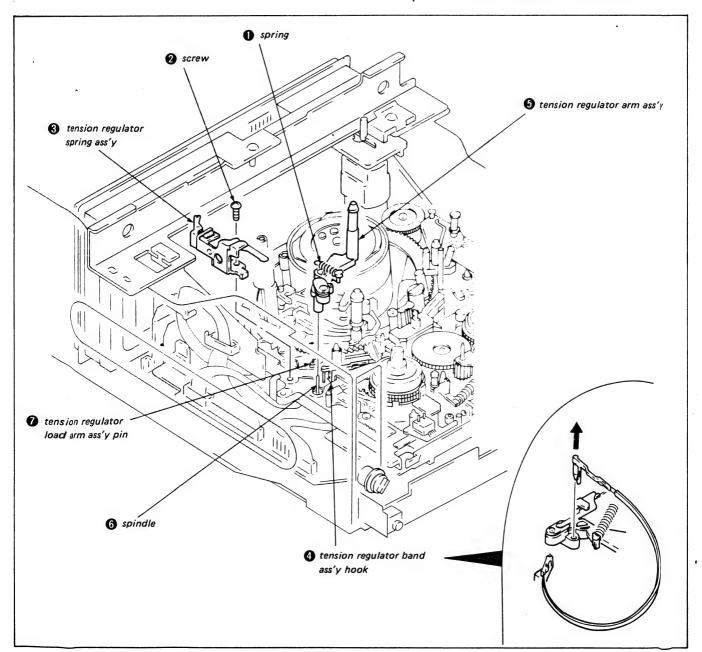


Fig. 3-4.

## 3-5. TENSION REGULATOR BAND ASSEMBLY

#### 1. Removal

- 1) Remove the S reel table assembly according to item 3-1, 1. Removal. (See Fig. 3-1)
- . 2) Remove the band arm hook 1.
  - 3) Remove hook 2 and the tension regulator band assembly 3. (See Fig. 3-5)

- 1) Mount the tension regulator band assembly 3. (Do not touch the band or change its shape.)
- 2) Fit on the band arm hook ①. (Fig. 3-5)
- Mount the S reel table assembly according to 3-1, 2. Mounting. (See Fig. 3-1)
- 4) Perform 3-21. FWD Back Tension Adjustment.

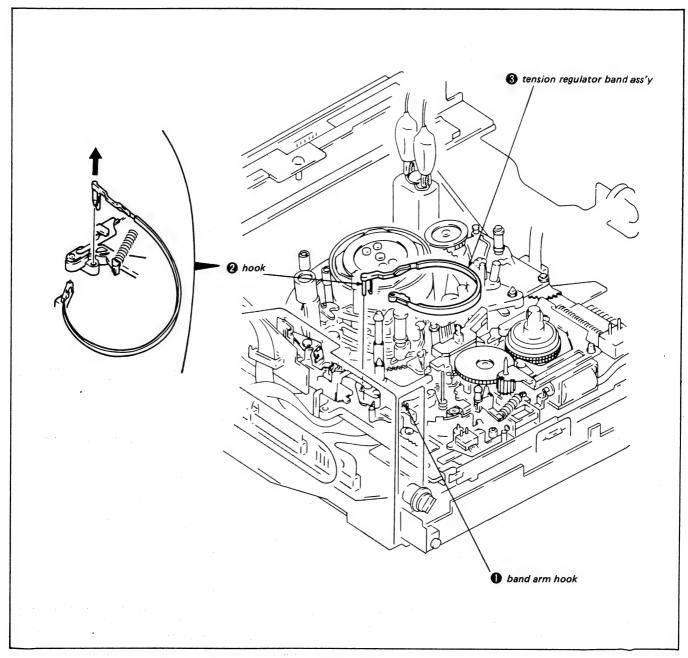


Fig. 3-5.

#### 3-6. LOADING MOTOR ASSEMBLY

#### 1. Removal

- 1) Open the MD-8D board ① according to item Section 2, 2-8.
- 2) Remove connector 2 from MD-8D board 1.
- 3) Remove L motor belt 3.
- 4) Remove cap cover 4.
- 5) Remove the two screws (a) and the loading motor assembly (b). (See Fig. 3-6)

- 1) Remove the loading motor shield plate from the loading motor which has been mounted on to the set.
- 2) Wind the loading motor shield plate removed in step 1) around the loading motor assembly 6. (Refer to mounting diagram)
- 3) Mount the loading motor assembly 6 and tighten the two screws 6.
- 4) Mount the cap cover 4.
- 5) Mount L motor belt 3. (See Fig. 3-6)
- 6) Connect connector 2 to MD-8D board 1. (See Fig. 3-6)
- 7) Mount MD-8D board 1 by following the procedure in item Seciton2, 2-8. in reverse.

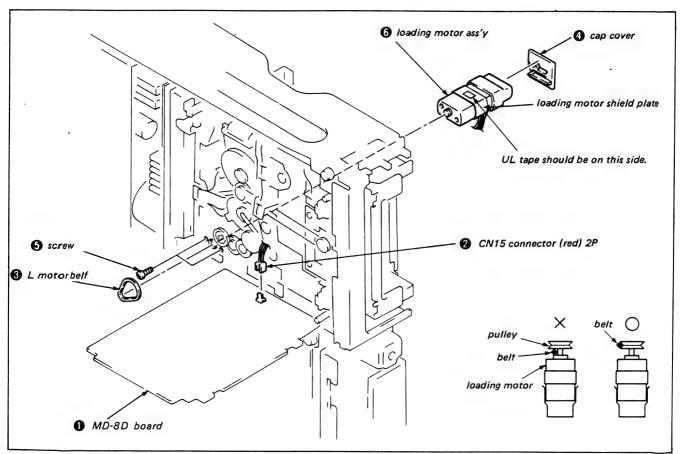


Fig. 3-6.

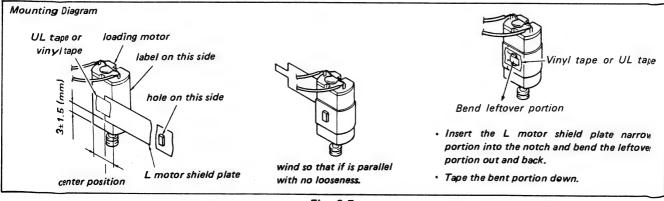


Fig. 3-7.

#### 3-7. LOADING RING ASSEMBLY

#### 1. Removal

- Remove the mechanism as described in item Section 2, 2-12.
- Operate the mode selector, and move the guide base assembly until just before lock, and the entrance guide assembly until just before lock where the ring stopper
   screw is visible. (Do not move loading ring assembly
- 3) Remove the stopper washer **4** and remove No. 10 gear assembly **5**.
- 4) Remove screw 6 and the roller stopper 7 and ring spacer 8.
- 5) Remove the two screws **9** and the ring stopper **3** and ring spacer **10**.
- 6) Remove the loading ring assembly as shown by arrow (A).
  (Refer to Fig. 3-8)

**Note:** Be careful that the loading ring assembly **1** does not touch the drum when it is removed.

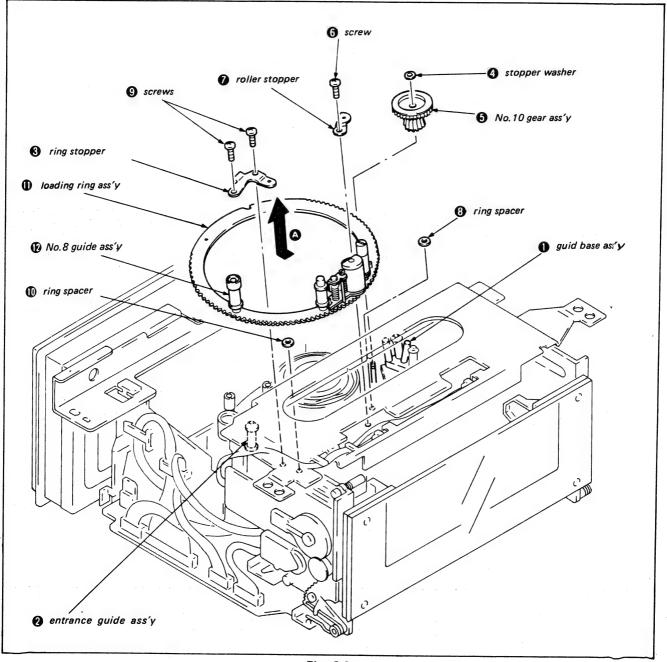


Fig. 3-8.

#### 2. Mounting

- 1) Mount the loading ring assembly os that it is in unthreaded state (pinch roller arm assembly is on the front panel side). (Check that is in the state in step 2) under Removal.)
- 2) Mount the ring spacer ① and ring stopper ③ and tighten with the two screws ②. (No. 8 guide assembly ② should be closer to the front panel than the ring stopper 3.)
- 3) Mount the ring spacer 3 and roller stopper 7 and tighten with screw 6. (Check that the loading ring assembly matches the three ring spacers.)
- 4) Place a half drop of oil on the shaft (8). (See Fig. 3-8)

- 5) Check that the protrusions on the drive changer assembly are in the indentations of the L-SW assembly and insert the No. 10 gear phase jig (Ref No. J-9). (See Fig. 3-9)
- 6) Mount No. 10 gear assembly 3 and stopper washer 4 while pushing the No. 8 guide assembly 2 against the ring stopper 3.
- 7) Pull out the No. 10 gear phase jig.
- 8) Set to LOADING TOP mode. (See Fig. 3-8)
- 9) Mount the mechanism by following the procedure in Section 2, 2-12. in reverse.

**Note:** Be sure to perform 4. Tape Path Adjustment after mounting.

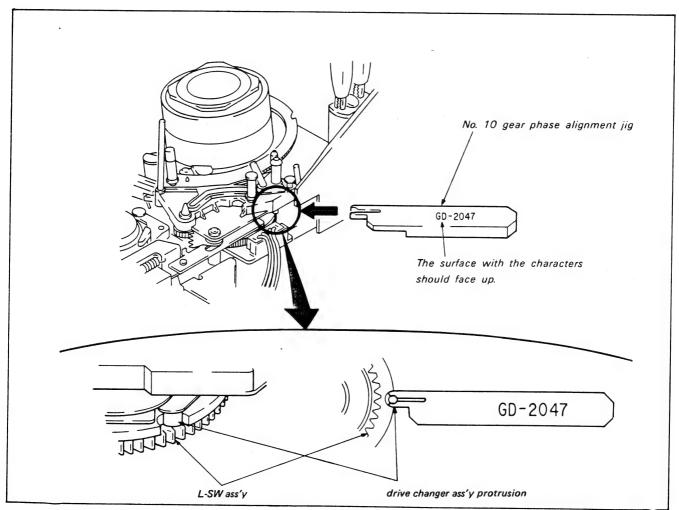


Fig. 3-9.

#### 3-8. PINCH ROLLER ASSEMBLY

#### 1. Removal

- 1) Remove the loading ring assembly as described in 3-7., 1. Removal. (See Fig. 3-8)
- 2) Remove stopper washer 1 . (See Fig. 3-10)
- 3) Change the position of the spring 3 on No. 7 guide assembly 2. (See Fig. 3-11)
- 4) Rotate pinch roller arm assembly 4 in the direction of arrow (A). (See Fig. 3-12)
- 5) Remove pinch roller arm assembly 4 in the direction of arrow 3. (See Fig. 3-13)
- 6) Remove spring 3. (See Fig. 3-14)

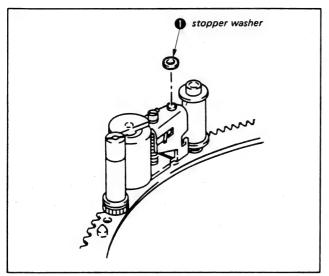


Fig. 3-10.

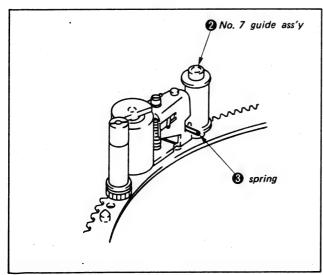


Fig. 3-11.

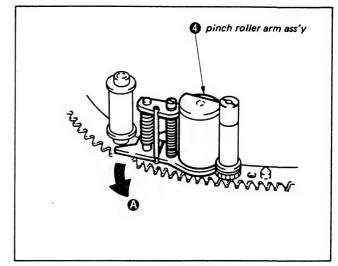


Fig. 3-12.

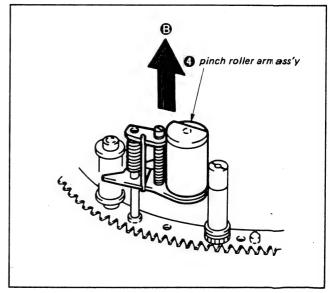


Fig. 3-13.

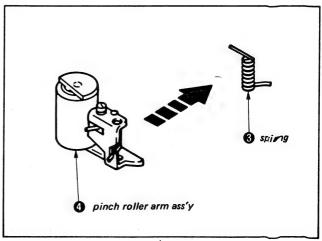


Fig. 3-14.

- 1) Position spring (See Fig. 3-15)
- 2) Insert the end of a paper clip **5** or other thin rod inside the pinch roller arm assembly hole **6**. (See Fig. 3-16, 3-17)
- 3) Push the end of the clip **5** through to contact the loading ring assembly shaft **7** and mount the pinch roller arm assembly **4**. (See Fig. 3-18, 3-19)
- 4) Place the spring on No. 7 guide assembly 2. At this time, check that the spring is hooked on section 6. (See Fig. 3-20)
- 5) Mount the stopper washer ①. (See Fig. 3-21)
- 6) Mount the loading ring assembly according to 3-7., 2. Mounting. (See Fig. 3-8)

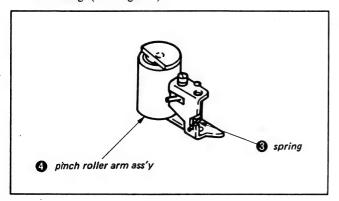


Fig. 3-15.

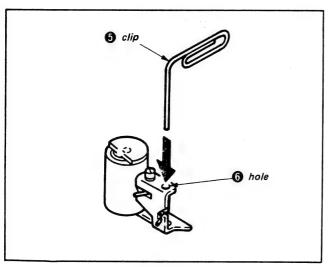


Fig. 3-16.

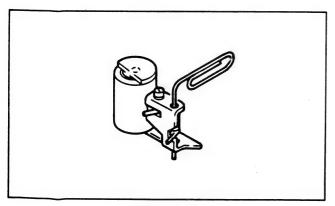


Fig. 3-17.

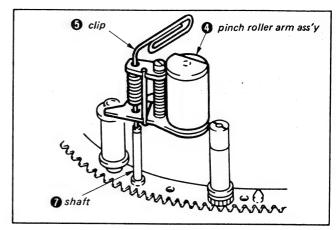


Fig. 3-18.

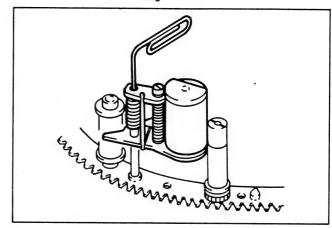


Fig. 3-19.

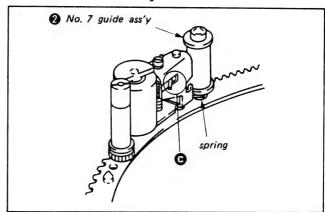


Fig. 3-20.

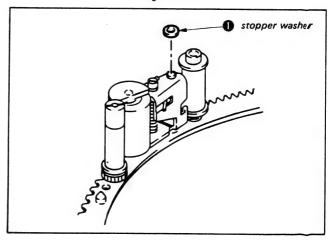


Fig. 3-21.

#### 3-9. SLANT GUIDE ASSEMBLY

#### 1. Removal

- 1) Remove the cassette compartment assembly according to item Section 2, 2-3.
- 2) Remove the loading ring assembly according to 3-7., 1. Removal. (See Fig. 3-8)
- 3) Remove screw 1 and E ring 2.
- 4) Remove the slant guide assembly (3). (Refer to Fig. 3-22)

#### 2. Mounting

1) Operate the mode selector, and line up the right edge of the L slider assembly and the right edge of the lock slider assembly. (See Fig. 3-23)

2) Set the slant guide assembly guide base assembly in unthreaded state (guide base assembly is on front panel side) and mount. (See Fig. 3-24)

Note: At this time, confirm the engagement position of the slant guide drive gear and L slider assembly gear. (Fig. 3-28)

- Mount the E ring 2 and tighten screw 1. (Fig. 3-22)
- Put in the state in 3-7., 1. Removal, 1).
- Mount the loading ring assembly according to 3-7., 2. Mounting (Fig. 3-8)
- Mount the cassette compartment assembly by following the procedure in Section 2, 2-3. in reverse.

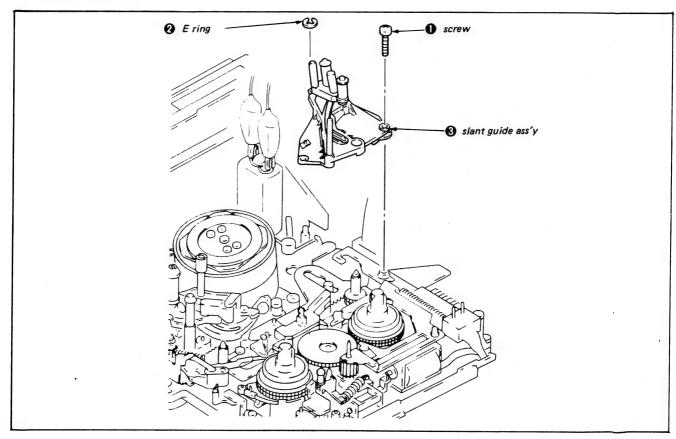


Fig. 3-22.

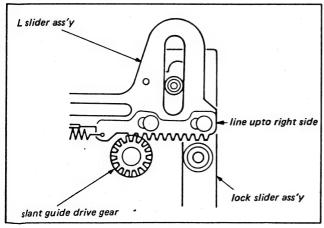


Fig. 3-23.

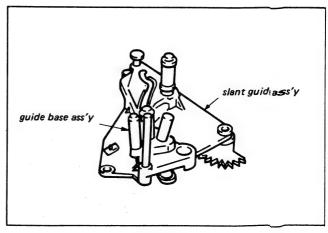


Fig. 3-24.

## 3-10. ENTRANCE GUIDE ASSEMBLY (No. 2 GUIDE ASSEMBLY)

#### 1. Removal

- Turn the rotary upper drum counterclockwise and separate the head portion from the entrance guide assembly .
- 2) Remove the two screws 2.
- 3) Remove No. 3 guide guide nut 3, and remove guide flange 4, guide 5 and coil spring 6.
- 4) Remove the entrance guide assembly 1 . (Fig. 3-25)

#### 2. Mounting

- 1) Engage the entrance guide assembly and L slider assembly so that the part without teeth ② on the bottom of the entrance guide assembly and the part without teeth ③ on the L slider assembly match.
- 2) Mount the coil spring 6, guide 5 and guide flange 4 in that order, then temporarily tighten the guide nut 3.
- 3) Tighten the two screws 2 . (Fig. 3-25)

Note: Be sure to perform 4. Tape Path Adjustment after mounting.

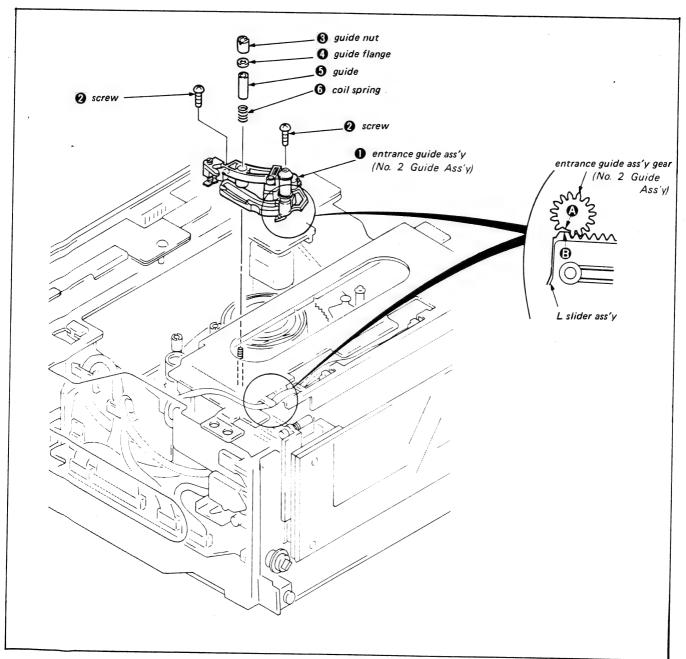


Fig. 3-25.

#### 3-11. L SLIDER ASSEMBLY

#### 1. Removal

- Remove the slant guide assembly according to 3-9., 1.
   Removal.
- Remove the entrance guide assembly according to 3-10., 1.
   Removal.
- 3) Set to DRUM START mode.
- 4) Remove slant guide drive gear 1.
- Remove the tension regulator load arm assembly 2 pin from the cam groove of the tension regulator arm assembly.
   (See Figure 3-4. Tension Regulator Arm Assembly)
- 6) Remove the two stopper washers 3.
- 7) Remove the L slider assembly **5** while pushing the RL arm assembly protrusion **4** in the direction of arrow **A**.
- 8) Remove the stopper washer **6** and the tension regulator load arm assembly **2**. (Fig. 3-26)

- 1) Lubricate the portions indicated in Fig. 3-27.
- 2) Mount the tension regulator load arm assembly 2 and the stopper washer 6. (Fig. 3-26)
- 3) Mount the L slider assembly **5** while pushing the RL arm assembly protrusion **4** in the direction of arrow **4**.
- 4) Put the tension regulator load arm assembly 2 pin into the M slider groove. (See Fig. 3-15, M slider)
- 5) Mount the two stopper washers 3.
- 6) Refer to 3-4., 2. Mounting, 2), and place the tension regulator load arm assembly 2 pin in the tension regulator arm assembly cam groove.
- 7) Operate the mode selector, and match up the right edge of the L slider assembly and the right edge of the lock slider assembly. (Refer to 3-9, 2. Mounting, 1))
- 8) Engage the slant guide drive gear so that the notch is 1 tooth away from the L slider assembly left side tooth. (Fig. 3-28)
- 9) Mount the entrance guide assembly according to 3-10., 2. Mounting.
- 10) Mount the slant guide assembly according to 3-9., 2. Mounting.

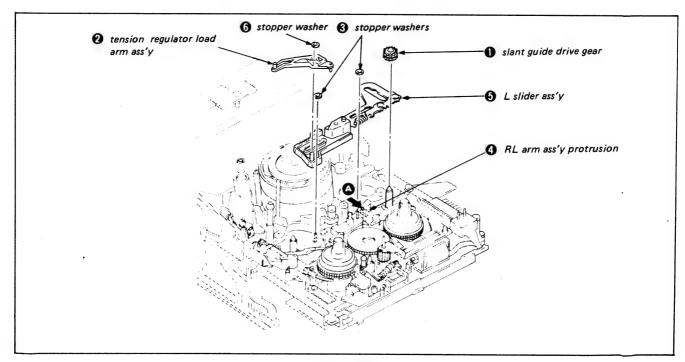


Fig. 3-26.

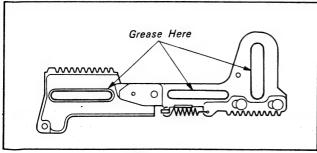


Fig. 3-27.

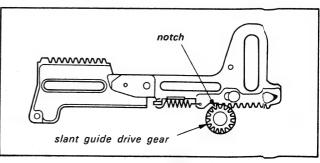


Fig. 3-28.

## 3-12. L-SW ASSEMBLY

#### 1. Removal

- Remove the L slider assembly according to 3-11., 1. Removal.
- 2) Remove lock slider holder 1.
- 3) Remove screw 2 and lock slider A 3.
- 4) Remove stopper washer 4 and coil spring 5.
- 5) Remove drive changer assembly 6.
- 6) Remove connector 7.
- 7) Remove the two screws 3 and the L-SW assembly 9. (Refer to Fig. 3-29)

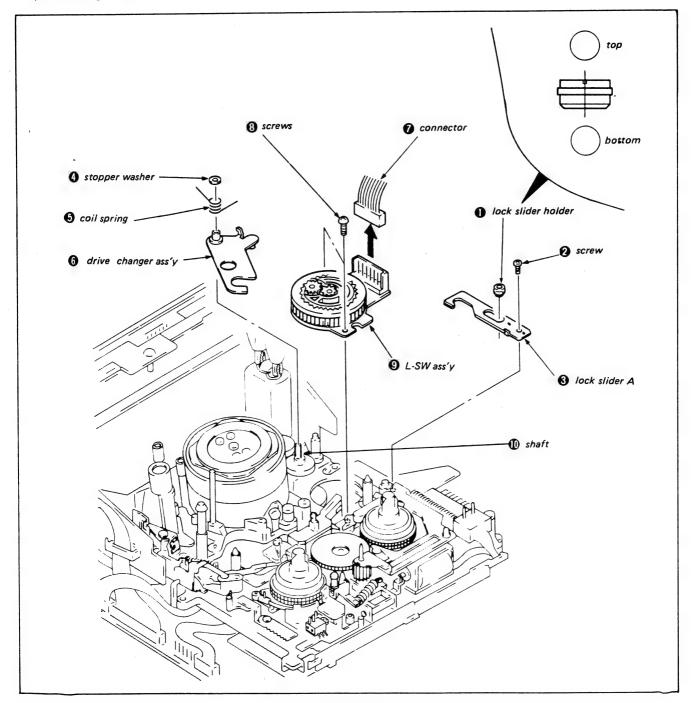


Fig. 3-29.

- 1) Place a half drop of oil on the L-SW assembly **9** shaft (planetary gear).
- 2) Mount L-SW assembly **9** and tighten with the two screws **8**.
- 3) Connect connector 7.
- Operate the mode selector and check that the L-SW assembly 9 rotates.
- 5) Place a half drop of oil on shaft **10**.
- 6) Grease the drive change assembly 6 as shown in Fig. 3-30.
- 7) Mount the drive changer assembly 6 . (See Fig. 3-29)
- 8) Mount the coil spring 6 and the stopper washer 4.
- 9) Operate the mode selector and check that the L-SW assembly 9 rotates.
- 10) Mount lock slider A 3 and tighten screw 2.
- 11) Mount lock slider holder 1. (Fig. 3-29)
- 12) Operate the mode selector and set to the position in Fig. 3-31.
- 13) Mount the L slider assembly according to 3-11., 2, Mounting.

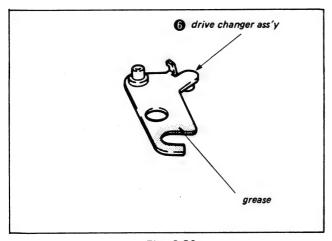


Fig. 3-30.

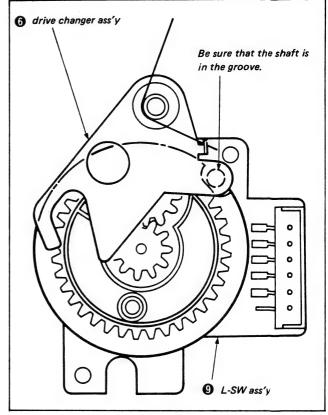


Fig. 3-31.

## 3-13. PLUNGER SOLENOID

#### 1. Removal

- 1) Open the MD-8D board according to Section 2, 2-8. and remove connector CN13 (yellow) 3P.
- Remove the cassette compartment assembly according to Section 2, 2-3.
- 3) Remove spring 1.
- 4) Remove the two stopper washers 2.
- 5) Remove screw 3 and the lock slider B assembly 4.
- 6) Remove the two screws **6** and the plunger solenoid **6**. (At this time, be careful not to scratch the T reel assembly with the screwdriver, and do not touch it.) (Fig. 3-32)

- 1) Insert the plunger solenoid pin 7 into the P arm hole 8 and mount with the two screws 6. (Again, be careful not to scratch or touch the T reel assembly.)
- 2) Mount lock slider B assembly 4 and tighten screw 3.
- 3) Mount the two stopper washers 2.
- 4) Hook on the spring ①. (Fig. 3-32)
- 5) Mount the cassette compartment assembly by following the procedure in 1-8. in reverse.
- 6) Connect the CN13 connector (yellow) to the MD-8D board.
- 7) Mount the MD-8D board by following the procedure in Section 2, 2-8. in reverse.

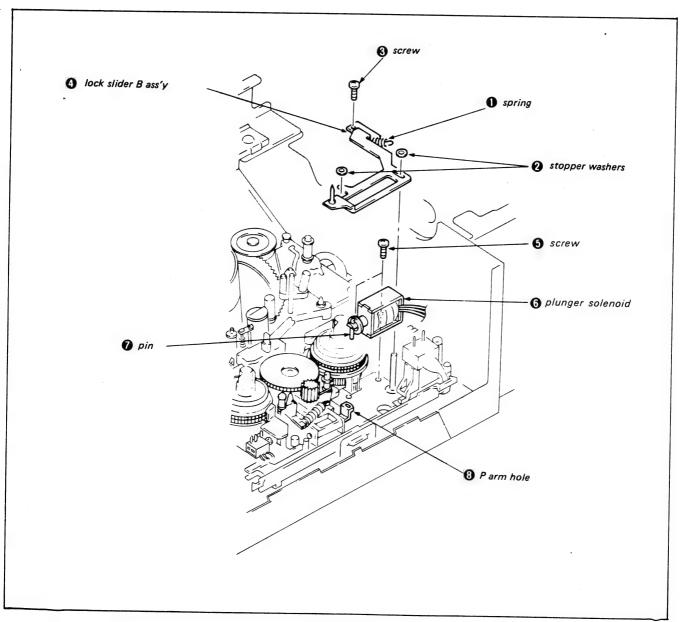


Fig. 3-32.

#### 3-14. M-SW ASSEMBLY

#### 1. Removal

- Open the MD-8D board according to Section 2, 2-8., and remove CN25 connector (yellow) 2P and lengthen the wiring which comes outside.
- 2) Remove the T reel assembly according to 3-2. (Fig. 3-2)
- 3) Remove stopper washer **1** and the drive gear B assembly **2**.
- 4) Remove the LD-1 board. (See Fig. 3-33)
- 5) Remove lock slider (3) assembly according to 3-13., 1. Removal, 3), 4) and 5).
- 6) Remove spring 4 and B release arm assembly 5.
- 7) Check EJECT mode.
- 8) Remove stopper washer **6** and the mode output gear **7**.
- 9) Remove screw 8 and the push switch 9.
- 10) Remove connector (10).
- 11) Remove the three screws **(1)**, the control motor cover assembly **(2)** and the M-SW assembly **(3)**.
- 12) Remove solder (a) and remove the DC motor (b). (Refer to Fig. 3-34)

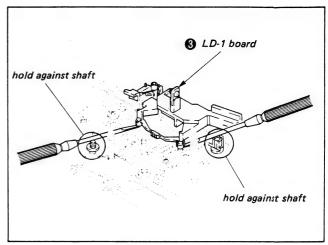


Fig. 3-33.

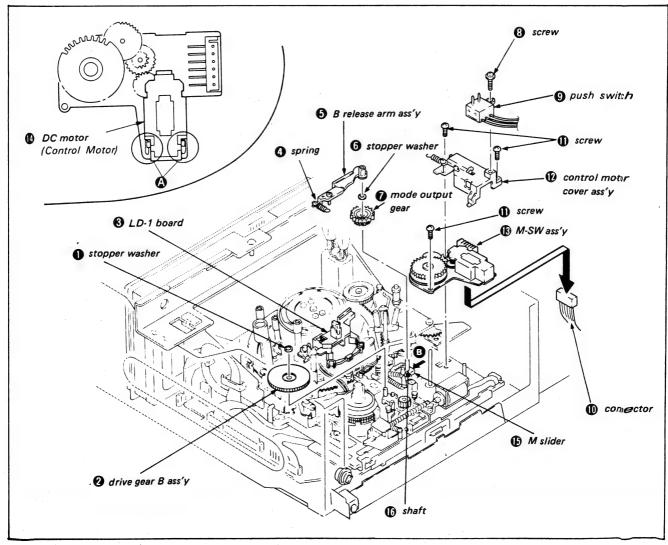


Fig. 3-34.

- 1) Solder the DC motor (Control Motor) (1).
- 2) Mount the M-SW assembly 18 and the control motor cover assembly 19, and tighten the three screws 10.
- 3) Connect connector 10.
- 4) Mount push switch 9 and tighten screw 8.
- 5) Check EJECT mode.
- 6) Check that M slider **(b)** is moved fully in the direction of arrow **(c)**.
- 7) Place a half drop of oil on shaft (6). (Fig. 3-34)
- 8) Mount the mode output gear 7 so that the positioning holes are lined up. (Fig. 3-35)

- 9) Mount stopper washer 6
- 10) Set to LOADING/UNLOADING mode.
- 11) Mount B release arm assembly 6 and spring 4.
- 12) Mount the lock slider B assembly according to 3-13., 2. Mounting, 2), 3) and 4).
- 13) Mount the LD-1 board 3.
- 14) Mount drive gear B assembly 2 and stopper washer 1. (Fig. 3-34)
- 15) Mount the T reel assembly according to 3-2., 2. Mounting.
- 16) Connect the 2P CN25 connector (yellow) to MD-8D board.
- 17) Mount the MD-8D board by following the procedure in Section 2, 2-8. in reverse.

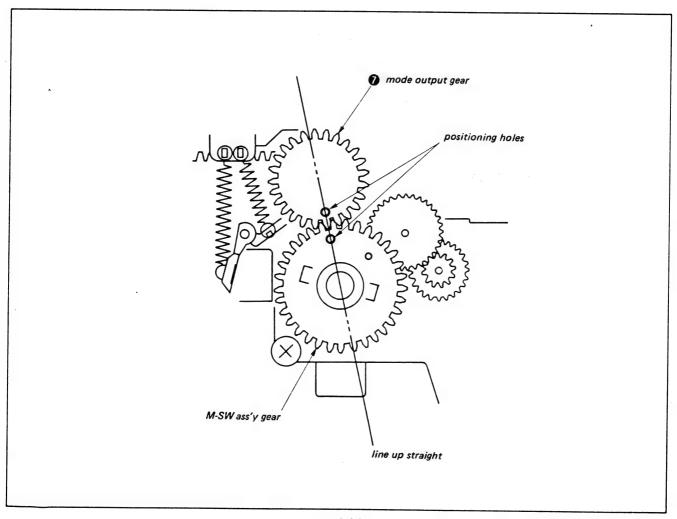


Fig. 3-35.

#### 3-15. M SLIDER

#### 1. Removal

- , 1) Open the MD-8D board according to Section 2, 2-8., and remove timing belt ①.
  - 2) Remove the pinch press arm assembly according to 3-3., 1. Removal. (Fig. 3-3)
  - 3) Remove the tension regulator arm assembly according to 3-4., 1. Removal. (Fig. 3-4)
  - 4) Remove the tension regulator band assembly according to 3-5., 1. Removal. (Fig. 3-5)
  - 5) Remove the loading ring assembly according to 3-7., 1. Removal (Fig. 3-8)
  - 6) Perform 3-14., steps 1)-6).
  - 7) Remove the tension regulator load arm assembly according to 3-11., 1. Removal, 8). (Fig. 3-26)
  - 8) Remove spring 2.
  - 9) Remove the two stopper washers 3 and remove the S main brake assembly 4 and T brake assembly 5.

- 10) Set to LOADING TOP, LOADING/UNLOADING mode.
- 11) Remove the two screws 6 and the drive assembly 0.
- 12) Perform 3-14., 1. Removal, steps 7) and 8).
- 13) Remove the two springs 8.
- 14) Remove REW brake assembly 9.
- 15) Remove stopper washer **10** and B release slider **11**.
- 16) Remove RVS arm (2).
- 17) Remove stopper washer **13** and ring lock spring **16** and RL arm assembly **15**.
- 18) Move the M slider 16 to the right (leave about 5 mm at the left.)
- 19) Remove the E ring and the pinch press lever assembly .
- 20) Remove spring (19) and the hard brake S (10).
- 21) Remove stopper washer ② , push the mode arm ② in the direction of arrow ③ , and lift up the left side of the M slider ⑤ to remove. (See Fig. 3-36)

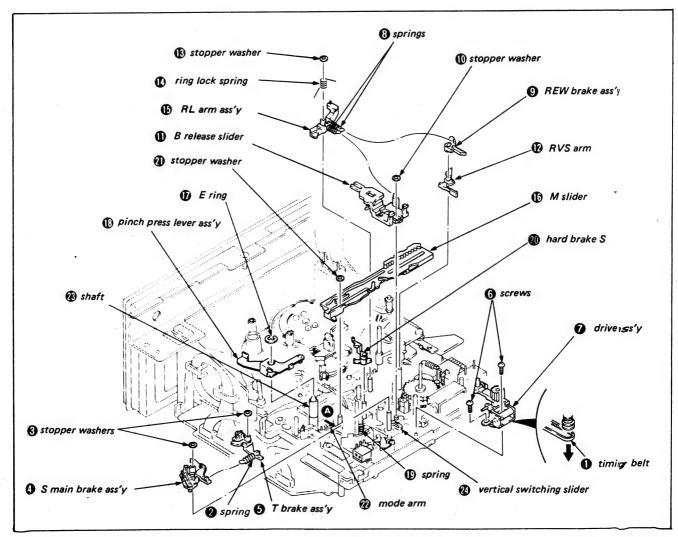


Fig. 3-36.

#### 2. Mounting

- 1) Apply grease. (See Fig. 3-37)
- 2) Push mode arm ② in the direction of arrow △, and mount the M slider ⑤, noting the positioning of the other parts in Fig. 3-38, and mount the stopper washer ③.
- 3) Mount hard brake S 2 and spring 19.
- 4) Apply grease. (See Fig. 3-39)
- 5) Apply a half drop of oil from the shaft ② groove to the bottom, mount the pinch press lever assembly ③ and the E ring ①.
- 6) Mount RL arm assembly **(b)**, mount the ring lock spring **(d)** and the stopper washer **(B)**.
- 7) Mount the RVS arm (2).
- 8) Mount B release slider **(1)** and stopper washer **(1)**.
- 9) Mount REW brake assembly 9.
- 10) Mount the two springs 3.

Note: Mount the springs as follows, being careful not to mix them up.

- B release slider spring: total diameter 2 mm. wire diameter 0.18 mm
- REW brake assembly spring: total diameter 1.6 mm.
   wire diameter 0.12 mm
- 11) Push the M slider 16 all the way to the left.
- 12) Perform 3-14., 2. Mounting, steps 7), 8) and 9).
- 13) Set to LOADING/UNLOADING mode.
- 14) Insert the drive assembly horizontal shaft into the vertical switching slider groove, and insert the protrusion on the RVS arm into the notch in the drive assembly and mount with the two screws .
- 15) Mount T brake assembly **3** and S main brake assembly **4**. Mount the two stopper washers **3** and the spring **2**. (See Fig. 3-36)
- 16) Mount the tension regulator load arm assembly according to 3-11., 2. Mounting, step 2).
- 17) Perform 3-14., 2. Mounting, steps 11)  $\sim$  16).
- 18) Mount the loading ring assembly according to 3-7., 2. Mounting.
- 19) Mount the tension regulator band assembly according to 3-5., 2. Mounting.
- 20) Mount the tension regulator arm assembly according to 3-4., 2. Mounting.
- 21) Mount the pinch press arm assembly according to 3-3., 2. Mounting.
- 22) Mount the timing belt 1.
- 23) Mount the MD-8D board by performing the procedure in Section 2, 2-8. in reverse.

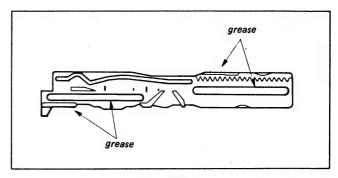


Fig. 3-37.

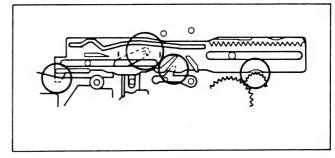


Fig. 3-38.

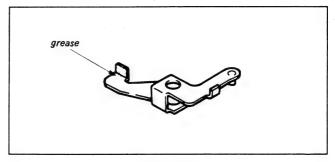


Fig. 3-39.

## 3-16. CAPSTAN MOTOR ASSEMBLY

#### 1. Removal

- 1) Remove the loading ring assembly according to 3-7., 1. Removal. (See Fig. 3-8)
- 2) Open the MD-8D board according to Section 2, 2-8.
- 3) Remove screw 1 and MD harness clamper A 2.
- 4) Remove timing belt 3.
- 5) Remove screw 4 and remove conversion gear base assembly 5 with a screwdriver. (Fig. 3-40, 3-41)

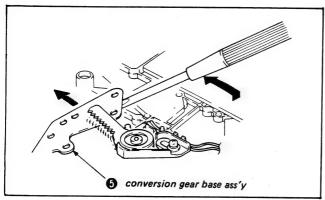


Fig. 3-40.

- 6) Remove connectors 6 and 7.
- 7) Remove the two screws (3) and remove the capstan motor assembly (9) in the direction of arrow (Δ). (Fig. 3-41)

- 1) Mount capstan motor assembly **9** and tighten the two screws **8**.
- 2) Connect connectors 6 and 7.
- 3) Mount conversion gear base assembly 3 and tighten screw 4.
- 4) Mount timing belt 3.
- 5) Mount MD harness clamper A 2 and tighten screw 1. (Fig. 3-41)
- 6) Mount the MD-8D board by following the procedure in Section 2, 2-8. in reverse.
- Mount the loading ring assembly according to 3-7., 2.
   Mounting (Fig. 3-8)

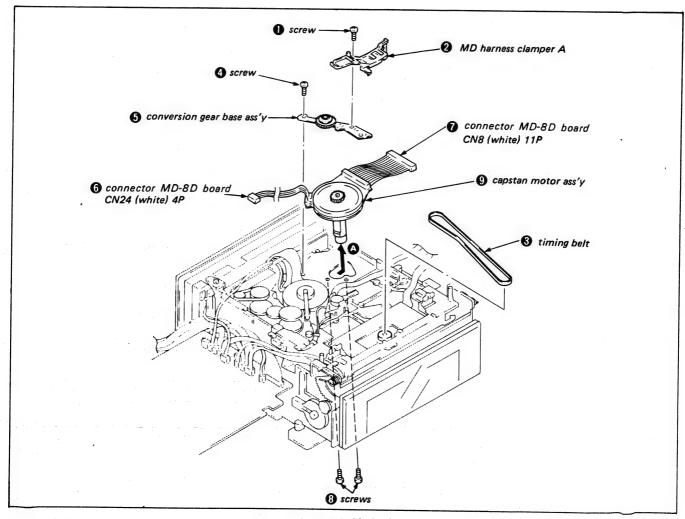


Fig. 3-41.

#### State of Wear of Video Heads Check

As the accuracy of the check depends on the state of the heads and precision of the checker, the results should be taken only as an indication of the state of wear.

#### [Adjustment of video head checker]

1) Mechanical zero

Verify that the pointer of the video head checker is at the mechanical zero position. If it is not at this position, adjust the mechanical zero control.

2) Battery voltage check

Set the MODE switch to "BATT" and set the POWER switch to "ON". The deflection of the pointer should be within the range marked "BATT". If not, replace the battery (use a 6F22 battery) as follows.

3) Calibration check

Set the POWER switch to "ON" and the MODE switch to "CAL", then adjust the CAL control so that the pointer is on the CAL mark.

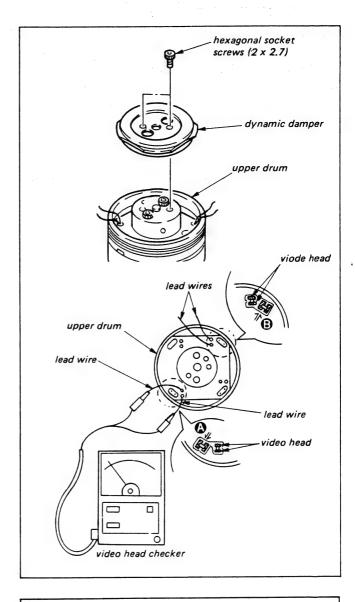
Note 1: Be sure to carry out this adjustment whenever the RANGE switch is changed.

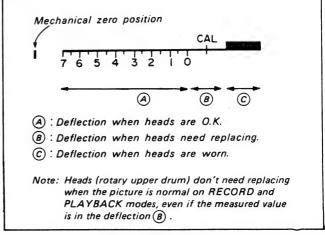
Note 2: Be sure to check CAL before measuring the head and proceed the measurement after adjusting CAL, if CAL is not properly set.

#### [Method of measurement]

- 1) Remove the two hexagonal socket screws (2 x 2.7) and dismount the dynamic damper.
- 2) Unsolder the portions indicated by the arrow (a) and (b).
- 3) Solder the lead wires on the 2 video head.
- Attach the measuring clips to the head leads.
   Be sure to separate the leads by at least 1.5cm.
- 5) Set RANGE switch to "A" and MODE switch to "MEAS". The pointer will deflect to indicate the state of wear of the heads.

Note: The deflection for the 2 video heads may be different so be sure to measure both.





## 3-17. REPLACEMENT OF ROTARY UPPER DRUM

#### 1. Removal

- There is a colour mark on the rotary upper drum, as shown in Fig. 3-42, so refer to the table below when replacing.
- If recording is possible, first record before removing.

Colour Mark Combinations when Replacing

COTOM White Communications						
New rotary up	per drum	Removed rotary upper drum				
Part No.	Colour Mark	Colour Mark				
A-7049-021-A	blue or red	blue or red				
	black or green	black or green				

Note: Do not combine colour marks other than in the ways listed above.

- 1) Remove the two hexagonal bolt screws 1 and the dynamic damper 2 . (Fig. 3-42)
- Remove all 8 solders in section A and confirm that the board and the pins on the bottom can move freely, using tweezers or the like. (Fig. 3-42)
- 3) Remove the two hexagonal bolt screws 3 . (Fig. 3-42)
- 4) Mount the supplied jig (Ref No. J-10) on the dynamic damper mounting hole with the two supplied screws 4, and mount the supplied hexagonal bolt screw 6 on supplied jig 3, then remove the rotary upper drum 6. (Fig. 3-43)

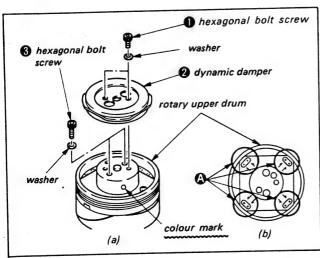


Fig. 3-42.

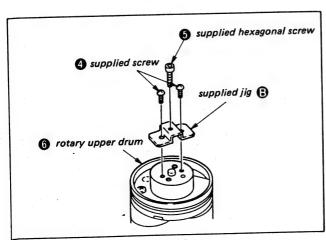


Fig. 3-43.

#### 2. Mounting

- Clean the flange surface and the surface of the rotary upper drum which contacts it, making sure that there is no dirt or scratches.
- 2) Use jig **(Ref No. J-10)** to line up rotary upper drum **(** and the positioning hole **(D)**, and lightly insert the rotary upper drum. At this time make sure that the pins come above the rotary upper drum board. Fix with tweezers if the pins catch. (Fig. 3-44)
- 3) Remove jig **G** and push the rotary upper drum in by hand, gently. (Fig. 3-45) When it is not inserted all the way, tighten the two hexagonal bolt screws 3 alternately to temporarily fix it.
- 4) Insert jig G into the positioning hole O again and make sure it goes in smoothly. If not, loosen the two screws 3 and insert a clock screwdriver into the hole to fix.
- Tighten the two screws 3.

Note: Be careful not to tighten too much.

- Solder the pins in section A. (Fig. 3-42) Note: Be careful that the solder does not go under the board.
- 7) Mount the dynamic damper 2 with the two screws 1. (Fgi. 3-42)

Note: • Be careful not to tighten too much.

· Be careful not to mix up the hexagonal bolt screw  $\bigcirc$  (2×2.7) and  $\bigcirc$  (2×5)

Note: After mounting, be sure to perform 4. Tape Path Adjustment.

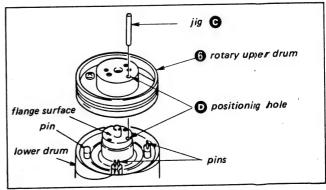


Fig. 3-44.

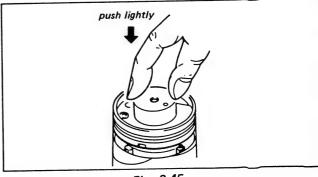


Fig. 3-45.

## Notes on Drum Assembly and Rotary Upper Drum Mounting

- When mounting the drum assembly with a magnetized screwdriver, mount with the head tip in the position shown below to prevent it from being affected by the screwdriver.
- 2. Be sure to perform tape path adjustment after mounting.

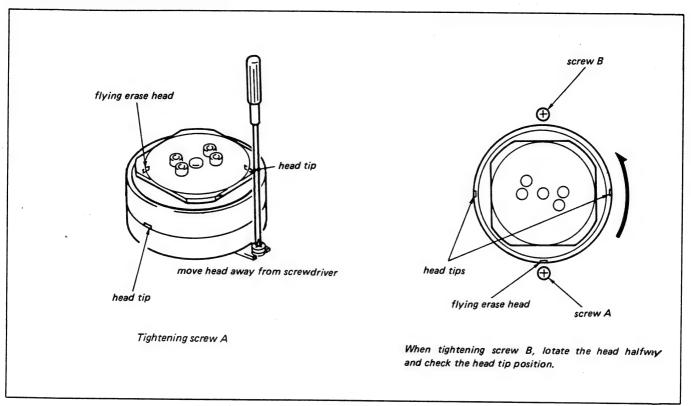


Fig. 3-46.

## 3-18. REPLACEMENT OF DRUM ASSEMBLY

#### 1. Removal

- 1) Open the MD-8D board according to Section 2, 2-8.
- 2) Remove screw **1** and the shaft ground pin **2**. (Fig. 3-47)
- 3) Remvoe the four connectors 3.
- 4) Remove the two screws 4.
- 5) Remove the drum assembly **6**. (Fig. 3-48)

Note: At this time, be careful that the drum assembly does not hit No. 3 guide, etc.

## 2. Mounting

- 1) Mount drum assembly **3** and tighten the two screws **4**.
- 2) Connect the four connectors 3. (Fig. 3-48)
- 3) Mount shaft ground pin 2 and tighten screw 1. (Fig. 3-
- 4) Mount the MD-8D board by following the procedure in Section 2, 2-8. in reverse.

Note: Be sure to perform 4. Tape Path Adjustment after mounting.

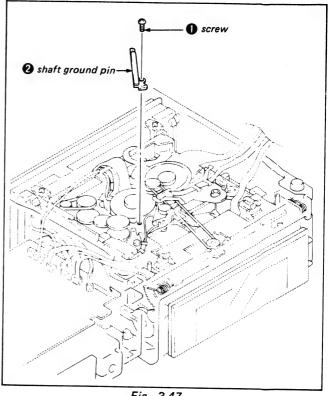
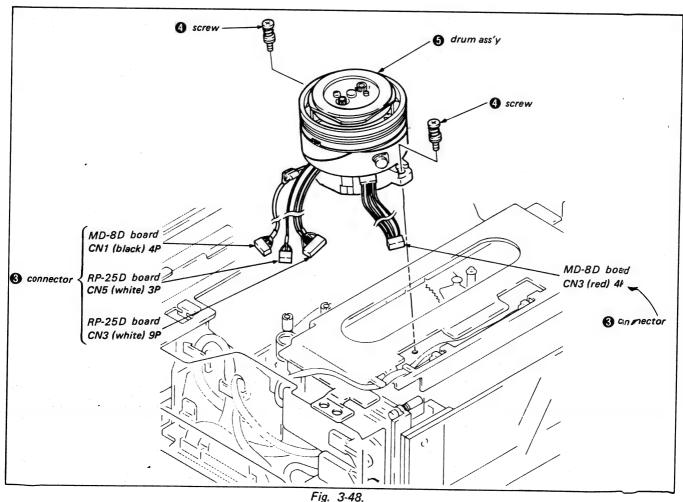


Fig. 3-47.



## 3-19. ADJUSTMENT AFTER REPLACEMENT OF No. 3 GUIDE AND No. 4 GUIDE

For replacement of both No. 3 and No. 4 guides, line up the tape along the upper flange after replacing. (See Fig. 4-21)

## 3-20. No. 5 GUIDE ASSEMBLY

#### 1. Removal

- 1) Remove the three screws 1 and No. 5 guide assembly.
- 2) Remove guide nut 2, spring 3 and No. 5 guide roller assembly 4. (Fig. 3-49)

#### 2. Mounting

- 1) Insert spring 3 into No. 5 guide roller assembly 4, engage the bottom section and tighten guide nut 2.
- 2) Mount No. 5 guide assembly and tighten the three screws

  1. (Fig. 3-49)

**Note:** Be sure to perform 4. Tape Path Adjustment after mounting.

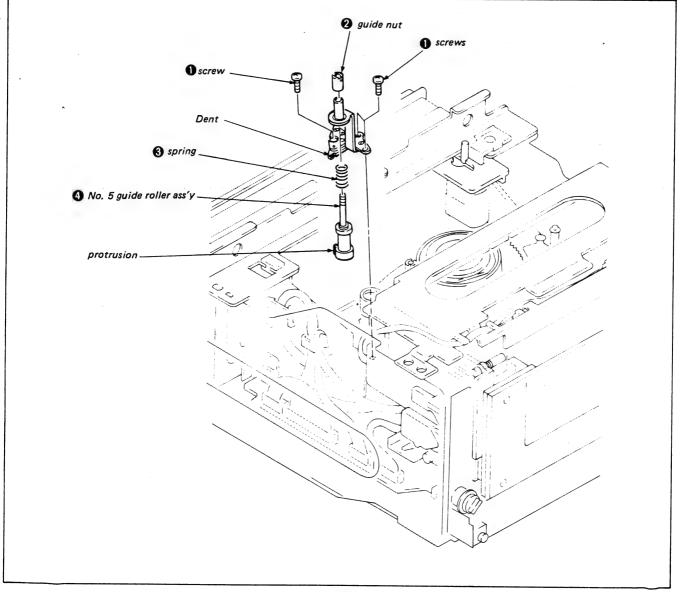


Fig. 3-49.

#### 3-21. FWD BACK TENSION ADJUSTMENT

- 1) Remove the cassette compartment assembly according to Section 2, 2-3.
- 2) Remove the mechanism according to Section 2, 2-12.
- 3) Set to LOADING END FWD mode.
- 4) Loosen band adjustment plate 1 screw 2 and adjust as shown by arrow 2 so that the tension regulator arm assembly slit 3 and tension regulator arm assembly pin 4 are positioned as shown, and tighten screw 2.
- 5) Place tension measurement reel (Ref No. J-7) 6 on the S reel table assembly 3 and line up with No. 1 guide, No. 2, No. 3 guide and the drum.
- 6) Pull dial tension gauge (Ref No. J-6) in the direction of arrow and hook spring onto the tension regulator spring hook assembly so that the value is 12.5 ± 1g, as shown. (Fig. 3-50)

Value too large: arrow direction Value too small: arrow direction

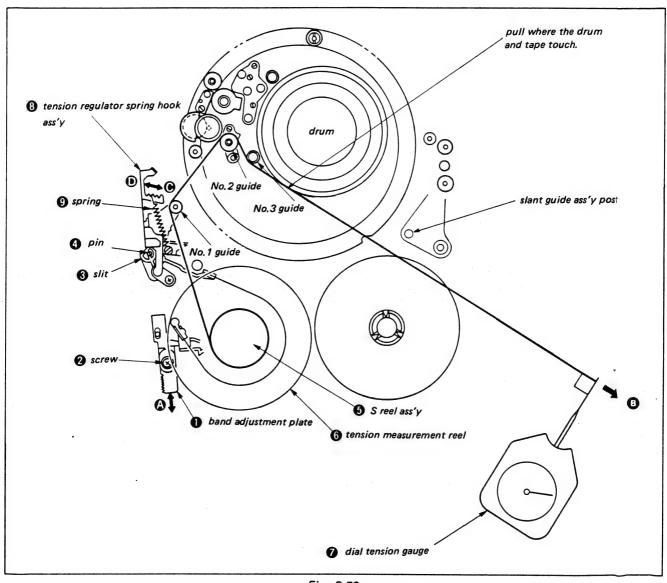


Fig. 3-50.

## 3-22. CHECK AND ADJUSTMENT OF TIMING BELT TENSION

- 1) Cover the tape end detection LED light receiving section (TE-1 board) with vinyl tape, etc. and do loading.
- 2) Remove timing belt **1** and stopper washer **2**, gear flange **3** and conversion gear assembly **4**. (Fig. 3-51)
- Short between SS-38F/G board resistor R10, IC101 side, and ground.
   SS-38G board ..... UK MODEL

SS-38F board . . . . AEP MODEL

- 4) Remove the pinch press arm side of the tension coil spring on the pinch press arm assembly (round hook side). (Fig. 3-52)
- 5) Press the erase prevention pin on the RECOG switch and hold down with tape, etc., then press the REC button. (Fig. 3-53)
- 6) Measure the voltage (Vo) between MD-8D board CAP I<sub>1</sub> and CAP I<sub>2</sub> with an analog tester. (unloaded state) (Fig. 3-54)

- 7) Mount conversion gear assembly 4, gear flange 3, stopper washer 2 and dynamic belt 1.
- 8) Remove drive gear (B).
- 9) Press the REC button as in step 5), and measure the voltage (Vx) between CAP I<sub>1</sub> and I<sub>2</sub> as in step 6). (for tension adjustment)
- 10) Confirm that the voltage (Vx) measured for tension adjustment is 5 mV-10 mV higher than that measured (Vo) in unloaded state. If not, adjust as follows. Adjustment Procedure:
  - i) Loosen screw **1** and slide the idler assembly as shown by arrow **4**, then tighten screw **1**. (Fig. 3-55)
  - ii) Check again following step 9).
  - iii) Repeat i) and ii) until the specifications are met.
- 11) Remove the short performed in step 3).
- 12) Mount the tension gear (B) and pinch press arm assembly tension coil spring.

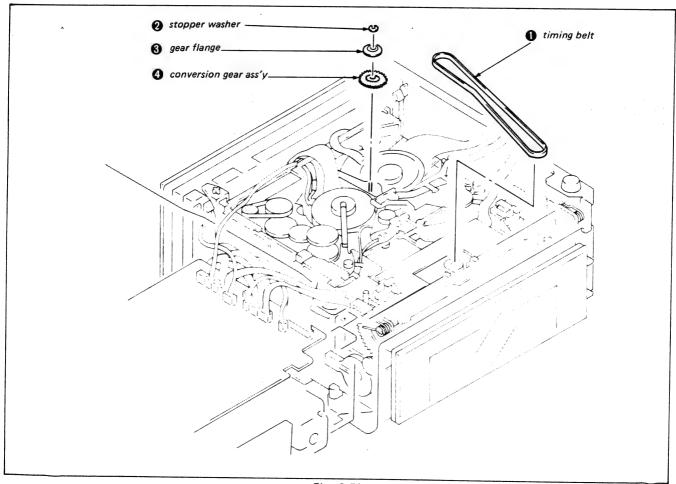


Fig. 3-51.

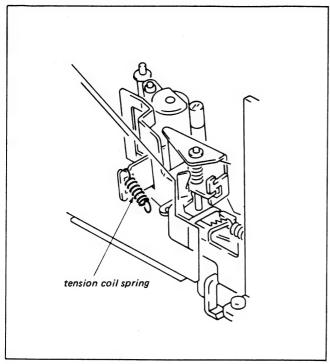


Fig. 3-52.

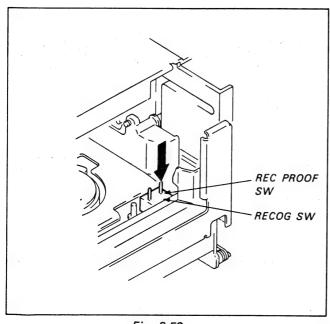


Fig. 3-53.

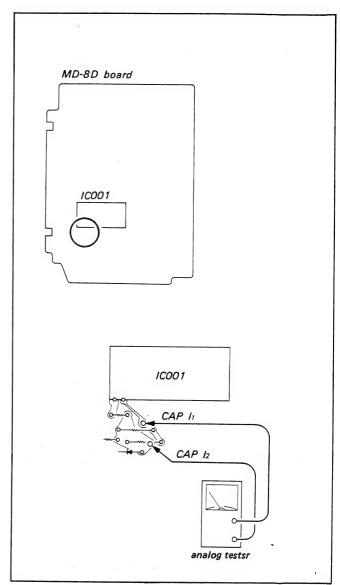


Fig. 3-54.

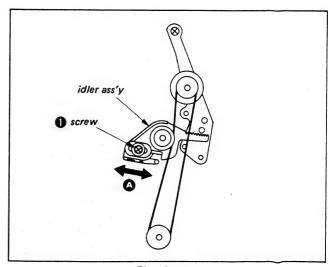


Fig. 3-55.

# 3-23. GEAR REPLACEMENT AND ADJUSTMENT (CASSETTE COMPARTMENT ASS'Y)

- 1. Drive Gear (R) Replacement and Adjustment
- Remove the cassette compartment assembly according to Section 2, 2-3.
- 2) Release C lock plate 1 and raise FC holder assembly 2.
- 3) Remove stopper washer 3 and relay gear 4.
- 4) Replace drive gear (R) 6.
- 5) Insert a thin rod into drive gear (R) 5 positioning hole 6 and door gear R positioning hole 7 and make sure that it goes through.
- 6) Mount relay gear 4 and stopper washer 3.

- 7) Close cassette compartment cover (H) assembly 3 and confirm that FC holder assembly 2 locks.
- 8) Confirm that cassette compartment cover (H) assembly **3** and FC side plate R are parallel.
- 9) Release C lock plate and check that FC holder assembly comes up and cassette compartment cover (H) assembly goes down and locks when the cassette compartment cover (H) assembly si is closed (Fig. 3-56)
- 10) Mount the cassette compartment assembly by following the procedure in Section 2, 2-3. in reverse.

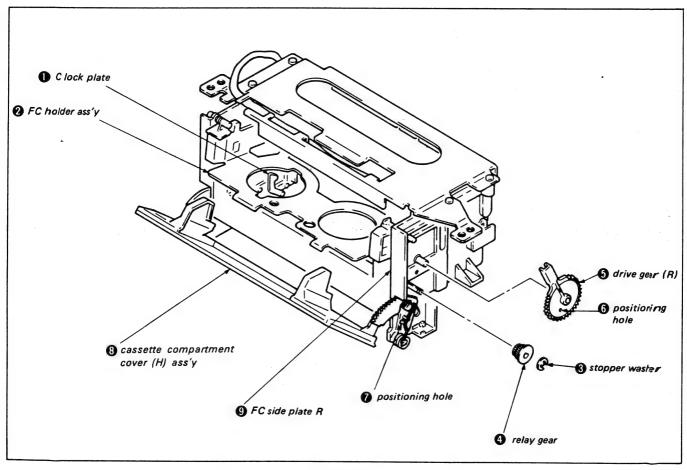
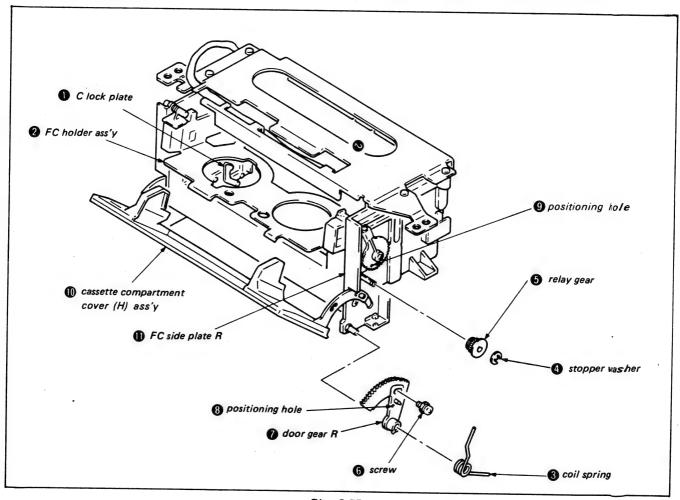


Fig. 3-56.

## 2. Door Gear R. Replacement and Adjustment

- 1) Remove the cassette compartment assembly according to Section 2, 2-3.
- 2) Release C lock plate 1 and raise FC holder assembly 2.
- 3) Remove coil spring 3.
- 4) Remove stopper washer 4 and relay gear 5.
- 5) Remove screw 6 and replace door gear R 7.
- 6) Insert thin rods into door gear R 7 positioning hold 3 and drive gear (R) positioning hole 9.
- 7) Engage the relay gear 6 with both gears and mount stopper washer 4.
- 8) Temporarily tighten screw 6.
- 9) Pull out the two rods.

- 10) Close cassette compartment cover (H) assembly **(1)** and confirm that the FC holder assembly **(2)** locks.
- 11) Insert a finger between the cassette compartment cover (H) assembly and FC side plate R so that they become parallel, and tighten screw .
- 12) Mount coil spring 3.
- 13) Release C lock plate **1** and confirm that FC holder assembly **2** comes up and cassette compartment cover (H) assembly **1** opens. Also, check that the FC holder assembly **2** goes down and locks when the cassette compartment cover (H) assembly **1** is closed. (Fig. 3-57)
- 14) Mount the cassette compartment assembly by following the procedure in Section 2, 2-3. in reverse.



Flg. 3-57.

- 3. Drive Gear (L) Replacement and Adjustment
- Remove the cassette compartment assembly according to Section 2, 2-3.
- 2) Remove screw 1 and FC harness cover 2.
- 3) Release C lock plate 3 and raise FC holder assembly 4.
- 4) Remove screw 6 and damper 6.
- 5) Remove stopper washer 7 and relay gear 8.
- 6) Replace drive gear (L) (9).
- 7) Insert thin rods into drive gear (L) **9** positioning hole **10** and door gear L positioning hole **10** and confirm that they go through.
- 8) Mount the relay gear 8 and stopper washer 7.
- 9) Close cassette compartment cover (H) assembly 2 and confirm that the FC holder assembly 4 locks.

- 10) Confirm that the cassette compartment cover (H) assembly and FC side plate L B are parallel.
- 11) Mount damper 6 and tighten screw 6.
- 12) Mount FC harness cover 2 and tighten screw 1.
- 13) Release C lock plate 3 and confirm that the FC holder assembly 4 comes up and the cassette compartment cover (H) assembly 9 opens. Also, confirm that the FC holder assembly 4 goes down and locks when the cassette compartment cover (H) assembly 9 is closed. (Fig. 3-58)
- 14) Mount the cassette compartment assembly, following the the procedure in Section 2, 2-3, in reverse.

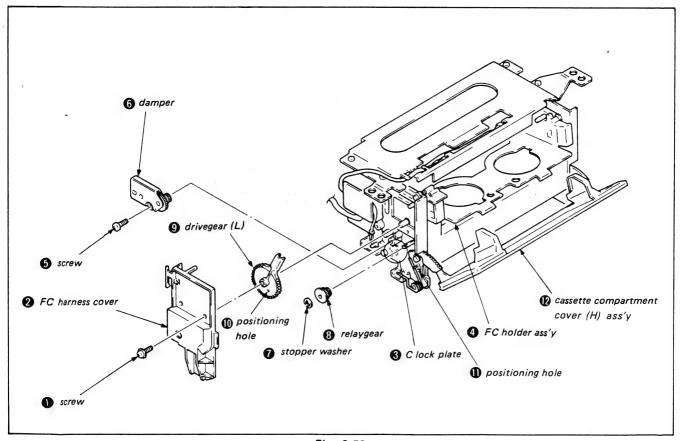


Fig. 3-58.

# 4. Door Gear L Replacement and Adjustment

- 1) Remove the cassette compartment assembly according to Section 2, 2-3.
- 2) Remove screw 1 and FC harness cover 2.
- 3) Release C lock plate 3 and raise FC holder assembly 4.
- 4) Remove coil spring 6.
- 5) Remove stopper washer 6 and relay gear 7.
- 6) Remove screw 3 and replace door gear L 9.
- 7) Insert a thin rod into door gear L **9** positioning hole **10** and drive gear L positioning hole **11**.
- 8) Engage the relay gear 7 with both gears and mount stopper washer 6.
- 9) Temporarily tighten screw 8.
- 10) Remove the two rods.

- 11) Close essette compartment cover (H) assembly **(P)** and confirm that the FC holder assembly **(4)** locks.
- 12) Insert a finger between the cassette compartment cover (H) assembly and FC side plate L so that they are parallel, and tighten screw .
- 13) Mount coil spring 6.
- 14) Mount FC harness cover 2 and tighten screw 1.
- 15) Release C lock plate 3 and confirm that the FC holder assembly 4 comes up and cassette compartment cover (H) assembly 9 opens Also, confirm that the FC holder assembly 4 goes down and locks when the cassette compartment cover (H) assembly 10 is closed. (Fig. 3-59)
- 16) Mount the cassette compartment assembly by following the procedure in Section 2, 2-3, in reverse.

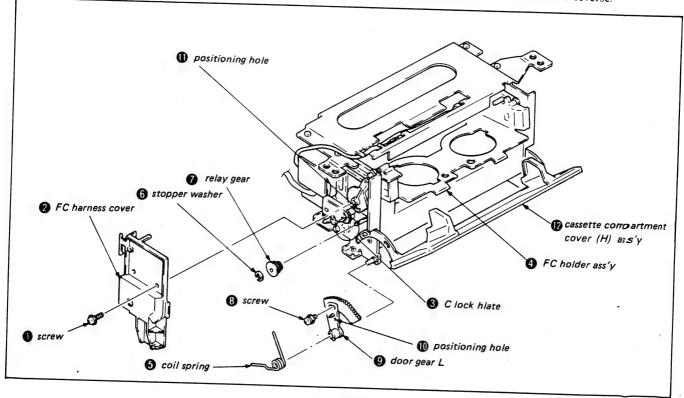


Fig. 3-59.

# 3-24. CHECK OF S AND T MAIN BRAKE TORQUE

- 1) Remove the front panel according to Section 2, 2-1.
- 2) Remove the cassette compartment assembly accroding to Section 2, 2-3.

#### 1. S Main Brake Torque

- 1) Set to FF/REW mode.
- 2) Place the tension measurement reel (Ref No.J-8) on the S reel table.
- Pull the dial tension gauge (Ref No.J-6) in the direction of the arrow and confirm that the specifications are satisfied.
   (Fig. 3-60, 3-61)

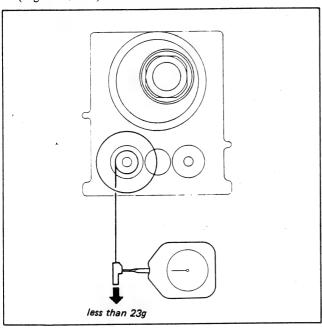


Fig. 3-60.

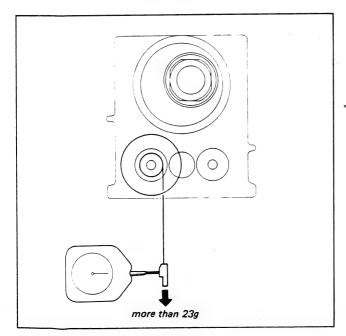


Fig. 3-61.

#### 2. T Main Brake Torque

- 1) Set to FF/REW mode.
- 2) Place the tension measurement reel (Ref No.J-8) on the T reel table.
- Pull the dial tension gauge (Ref No.J-6) in the direction of the arrow and confirm that the specifications are satisfied. (Fig. 3-62, 3-63)

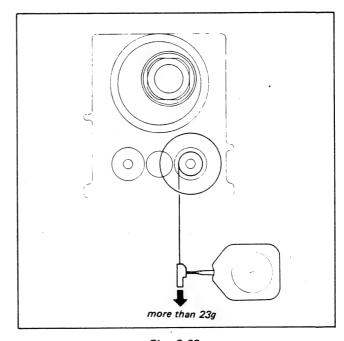


Fig. 3-62.

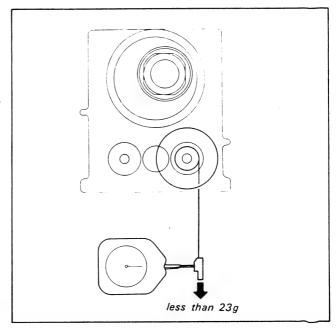


Fig. 3-63.

#### 3-25. CHECK OF S AND T SOFT BRAKE TORQUE

- 1) Remove the front panel according to Section 2, 2-1.
- Remove the cassette compartment assembly according to Section 2, 2-3.

## 1. S Soft Brake Torque

- 1) Set to FF/REW mode.
- Place the tension measurement reel (Ref No.J-8) on the S reel table.
- 3) Release the S main brake with a finger.
- 4) Pull the dial tension gauge (Ref No.J-6) in the direction of the arrow and confirm that the specifications are satisfied. (Fig. 3-64)

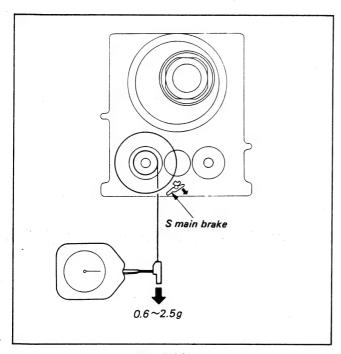


Fig. 3-64.

## <sup>1</sup> 2. T Soft Brake Torque

- 1) Set to REV mode.
- Place the tension measurement reel (Ref No.J-8) on the T reel table.
- 3) Release the T main brake with a finger.
- 4) Pull the dial tension gauge (Ref No.J-6) in the direction of the arrow and confirm that the specifications are met. (Fig. 3-65)

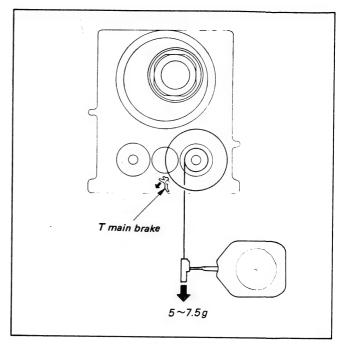


Fig. 3-65.

## 3-26. CHECK OF REV AND REW BRAKE TORQUE

- Remove the front panel according to Section 2, 2-1.
- 2) Remove the cassette compartment assembly according to Section 2, 2-3.

#### 1. REV Brake Torque

- 1) Set to REV mode.
- 2) Place the tension measurement reel (Ref NoJ-8) on the S reel table.
- 3) Release the S main brake with a finger.
- 4) Pull the dial tension gauge (Ref No.J-6) in the direction of the arrow and confirm that the specifications are satisfied. (Fig. 3-66)

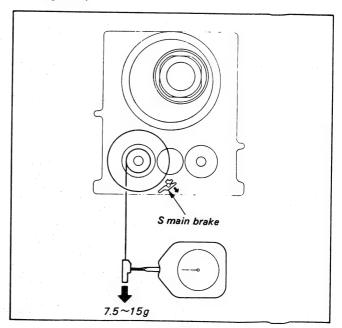


Fig. 3-66.

#### 2. REW Brake Torque

- 1) Set to FF/REW mode.
- 2) Place the tension measurement reel (Ref No.J-8) on the T reel table.
- Pull the dial tension gauge (Ref No.J-6) in the direction of the arrow and confirm that the specifications are met. (Fig. 3-67)

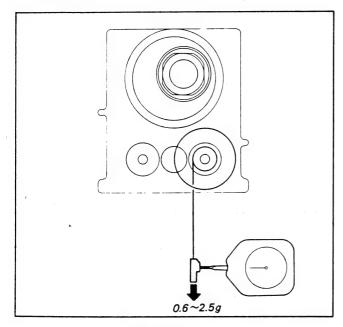


Fig. 3-67.

# 3-27. CHECK BY FWD, RVS WINDING TORQUE CASSETTE

- 1) Insert the FWD, RVS winding torque cassette (Ref No.J-12).
- 2) Set for playback mode and confirm that T reel table torque is 9.5~15.5 g cm.
- 3) Set for playback mode, and check that the S reel torque immediately after the REW button is pressed is 17-23 g · cm.
- 4) Replace the appropriate reel table if the above specifications are not met.

#### Blade clock screwdriver 4. TAPE PATH ADJUSTMENT Guide for (lock jig) controlling exit TAPE RUNNING SYSTEM DIAGRAM Screw for adjusting side tape running Guide for adjusting entrance exit side upper running (RF output wave side upper running amount amount (number of from flat) (number of peaks in RF output waveform) peaks in RF output waveform) This guide does not control 0.5-4 waveform tape running much, but No.6 guide 1.5-3.5 waveform absorbs tape fluctuation at Guide for controlling tape drum entrance portion Preset running during completed Outward tilt Azimuth (capstan Increase in number of peaks in RF output Decrease in number of waveform peaks in RF output waveform Increase in number of peaks in RF output Decrease in number of peaks in RF output waveform Azimuth waveform (Dtum No adjustment side) Inward tilt Capstan shaft roller Azimuth (#6 Side) Preset Guide for completed controlling entrance side Preset completed tape running Outward tilt (RF output No adjustment waveform (CAUTION) Tape should not touch upper and No adjustment lower frange during free-running Azimuth (#7 Side) This guide does not control tape running much, but absorbs Allen wrench tape fluctuation at (lock jig) drum exit portion

2400

#### [REGARDING TRACK SHIFT & MONITOR JIG]

The video 8 system employs a high precision tracking ATF (auto track finding) and instantaneously controls the tape running speed with the 4 kinds pilot signals. In this way, the tracking adjustment knob becomes unnecessary, and accurate tracking has become possible.

However, on the other hand, there has been difficulty in adjusting the tape path system with the ATF method. It was due to the fact that complete adjustment had been impossible to be performed because even when the tracing of the head had been a slightly off course, the ATF would perform correction automatically.

Because of this, adjustment is carried out to the tape path system by using the track shift & monitor jig (Ref. No. J-6080-851-A). As the track shift and monitor jig forcibly releases the ATF and sets the tracking amount (track shift) manually, the adjustment of the tape path system can easily be carried out.

Perform this adjustment after the electrical adjustment of Section 5 has been completed.

# 4-1. CONNECTION WITH TRACK SHIFT AND MONITOR JIG

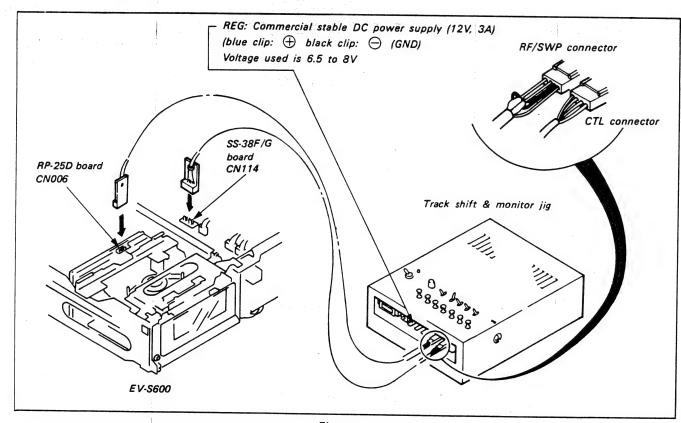


Fig. 4-1

#### [Track Shift & Monitor Jig Power Supply]

The track shift & monitor jig has three types of connectors for external power supply, and the following three types of power supply can be used.

Connector Name	Power Supply			
SYSTEM CONN	Connect modified CCD-V8E/UB AC adapter AC-V8 E/UB. (Refer to the track shift and monitor jig instruction manual for the modification procedure.)			
AC ADP	Betamovie AC adapter AC-M100E/ UB is connected.			
REG	Connect commercially sold DC stable power supply of more than 12V3A and use at 6.5 ~ 8V.  Be sure to make correct ⊕ and ⊖ connections.			

- Two or more types of power supply can not be used at the same time.
- Use the connector supplied with the track shift & monitor jig when connecting.
- Power supplies or voltages other than those given above should not be used.
- When using the modified AC-V8E/UB, the circuit power supply is cut off about 10 seconds after the AC-V8E/UB power switch is turned off.
- Power is not supplied to EV-S600 itself, so be sure to supply
   AC power to it at the same time.

#### [Connector Connection]

Connect the track shift & monitor jig and EV-S600 as shown in Figure 4-1. Connect RF/SWP connector to RP-25D board CN006, and the CTL connector to SS-38F/G board CN114. board CN114.

### [Switch Settings]

SEL switch:

Set to ON when doing track shift.

When OFF, control is from EV-S600 side.

PATTERN switch: Set to EV side. ATF LOCK: Set to OFF.

Other switches are not used during EV-S600 adjustment.

#### 4-2. PREPARATION FOR ADJUSTMENT

- Perform cleaning of the tape running surface (the individual tape guides drums, capstan shafts and pinch rollers).
- 2) Connection of oscilloscope 1ch: CH2 pin (RF signal) 2ch: RF SWP pin (RF SWP signal) (Fig. 4-1)
- 3) Set the SEL switch of the track shift & monitor jig to OFF, then play back the alignment tape (WR5-1C) for tracking, and confirm that the RF waveform of both the entrance and exit sides become flat (Fig. (a) in 4-2). If the RF waveform of both sides is not flat, the adjustment should be carried out in accordance with the following.
  - \* In case the RF waveform on the entrance side is not flat (Fig. (b) in 4-2)... Perform the adjustment in Item 4-2, Entrance side adjustment.
  - \* In case RF waveform on the exit side is not flat (Fig. © in 4-2)... Perform the adjustment in Item 4-3, Exit Side Adjustment.

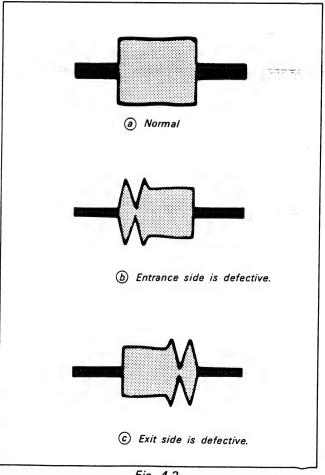


Fig. 4-2

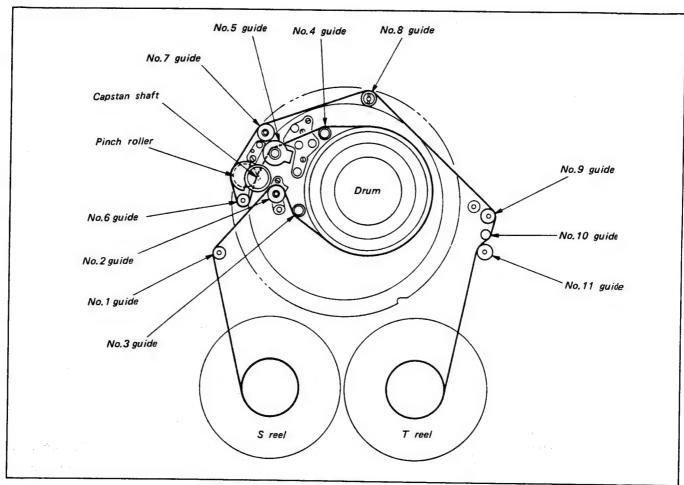


Fig. 4-3. Tape guide arrangement diagram

#### 4-3. ENTRANCE SIDE ADJUSTMENT

1) Play back the tracking alignment tape (WR5-1C) and loosen No.2 guide lock screw 1, and rotate No.2 and No.3 guides counterclockwise to free tape running on the entrance side. (Fig. 4-4)

Note: Since the space between the top and bottom flanges of No.2 guide is narrow, confirm that the tape is contacting neither top nor bottom flanges at this point. If No.2 guide is loosened excessively, the tape contacts the bottom flange and the RF waveform on the entrance side ceases to be the original free waveform.

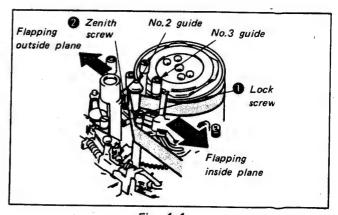


Fig. 4-4

2) Confirm that RF waveform on the entrance side has 0.5 to 3.5 peaks in this condition. If not, adjust as follows. (Fig. 4-5)

#### [less the 0.5 peak]

Adjust the No.2 guide zenith screw 2 by turning it counterclockwise 90° at a time. (Fig. 4-4)

#### [mere than 3.5 peaks]

Adjust the height adjustment screw of No.1 guide (tension regulator assembly) by turning it counterclockwise 90° at a time. (Fig. 4-6)

- Slowly rotate the No.2 guide clockwise to make the entrance side waveform approximately flat. (Fig. 4-7)
   Note: Do not rotate No.2 guide excessively.
- 4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 4-8)
- 5) Turn No.2 guide so that the entrance side waveform flattens slightly. (Fig. 4-9)
- 6) Flatten the waveform with No.3 guide. (Fig. 4-10)
- 7) Tighten No.2 lock screw ① . (Fig. 4-4)
  Note: ^ Be sure to perform checking in accordance with
  4-5.

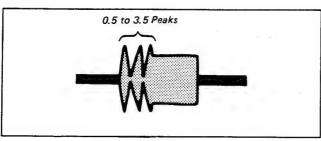


Fig. 4-5

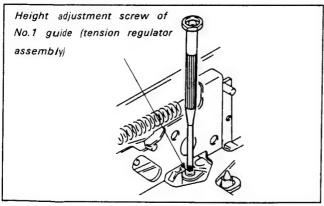


Fig. 4-6

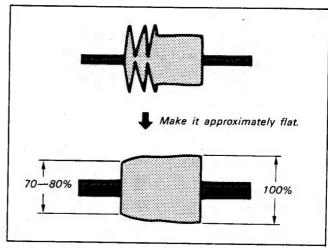


Fig. 4-7

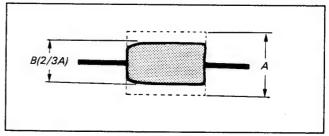


Fig. 4-8

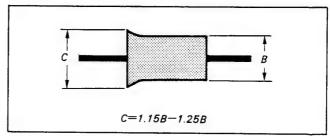


Fig. 4-9

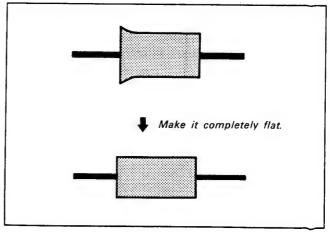


Fig. 4-10

#### 44. EXIT SIDE ADJUSTMENT

- Play back the alignment tape (WR5-1C) for tracking.
   Rotate No.4 guide counterclockwise and No.5 guide colockwise in order to make the tape running on the exit side free. (Fig. 4-11)
  - Note:

     If screw lock is stuck to the No. 5 guide nut, it may prevent the nut from rotating. Rotate the guide after immersing the nut thread into alcohol and to dissolve the screw lock agent.
    - Check that the tape is not contacting the top and buttom of flanges of No.5 guide during free tape running.
- 2) Check that the RF waveform on the exit side has 1.5 to 3.5 peaks. If not, readjust as follows: (Fig. 4-12)

#### If off standard

- i) Rotate the lock screw 1 counterclockwise to loosen.
- ii) Slowly rotate the zenith screw 2 45° at a time and wait until the RF waveform varies.
- iii) Rotate the lock screw 1 clockwise to tighten. (Fig. 4-11)
- Note: The waveform varies if the lock screw is tightened too strongly. Tighten moderately.
  - Never rotate the azimuth screw of No.5 guide.
- Rotate No.5 guide counterclockwise to make the RF waveform on the exit side approximately flat (Fig. 4-13)
   Note: The waveform reaction is slow against nut rotation. Rotate the nut after the waveform variations are stabilized.
- 4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 4-14)
- 5) Turn No.5 guide so that the exit side waveform flats slightly. (Fig. 4-15)
- Turn No.4 guide so that waveform flat. (Fig. 4-16)
   Note: Be sure to perform checking in accordance with

4-5 after making the adjustment.

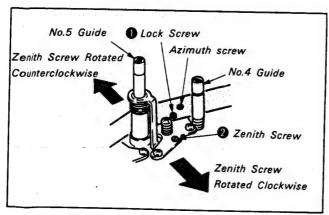


Fig. 4-11

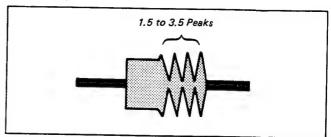


Fig. 4-12

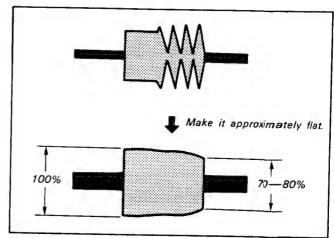


Fig. 4-13

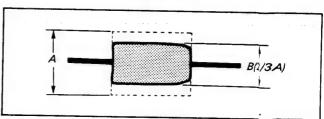


Fig. 4-14

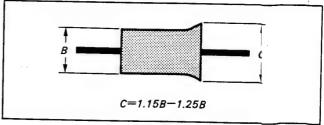


Fig. 4-15

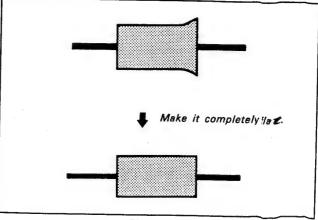


Fig. 4-16

## 4-5. CHECKING AFTER ADJUSTMENT

#### 4-5-1. Tracking check

- 1) Play back the alignment tape (WR5-1C) for tracking.
- Set the SEL switch of the track shift & monitor jig to ON, and turn track shift knob until the RF waveform amplitude is 2/3. (Fig. 4-17)

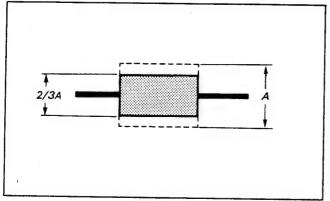


Fig. 4-17

3) Confirm that the RF waveform amplitude minimum value (E min) at this time is more that 80% of maximum value (E max.). (Fig. 4-18)

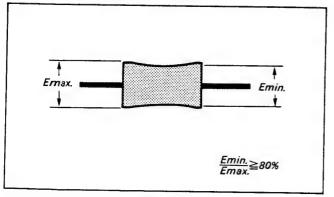


Fig. 4-18

4) Check that the fluctuation amount of RF waveform entrance and exit sides both is as shown in Fig. 4-18.

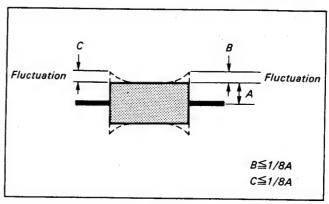


Fig. 4-19

- Set the SEL switch of the track shift & monitor jig to OFF.
- Set up the REV mode and confirm that the waveform noise pitches are uniform. If not adjust as follows. (Fig. 4-20)

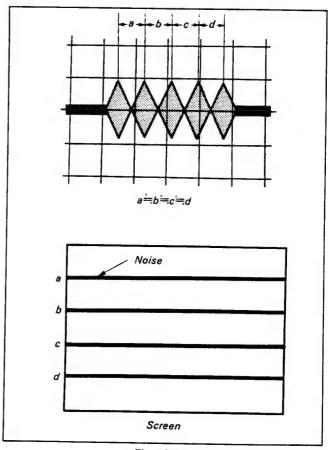


Fig. 4-20

# [Narrow noise pitch on entrance side (upper screen)] (Fig. 4-21)

Confirm that the RF waveforms are flat in the PLAYBACK mode.

#### Waveform is not flat:

Adjust the heights of No.2 and 3 guides as in 4-3. Entrance Side Adjustment.

#### Waveform is flat:

Check again by performing No.1 guide height and No.2 guide zenith adjustment according to 4-3. Entrance Side Adjustment.

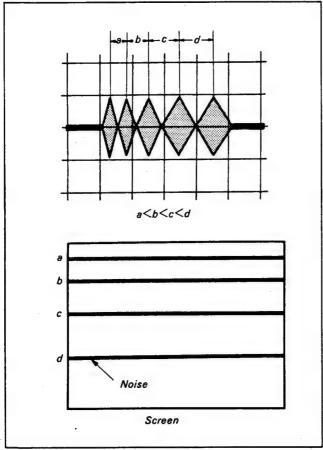


Fig. 4-21

# [Narrow noise pitch on exit side (lower screen)] (Fig. 4-22)

Set up the PLAYBACK mode and adjust No. 4 and 5 guide heights in accordance with 4-4. Exit Side Adjustment.

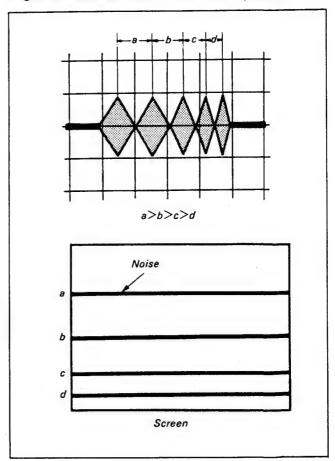


Fig. 4-22

# [Wide noise pitch on exit side (lower screen)] (Fig. 4-23)

Set up the PLAYBACK mode and confirm that the RF waveform is flat.

#### Waveform is not flat:

Adjust height of No.4 and 5 guides in accordance with 4-4. Exit Side Adjustment.

#### Waveform is flat:

Rotate the guide lower toothed wheel counterclockwise with No.6 guide lock jig (Ref. No.J-11) to loosen the toothed wheel. Rotate No.6 guide counterclockwise 45° to tighten the lower toothed wheel. Confirm the RF waveform of the REV mode again. (Fig. 4-24)

Note: Wrinkles may be caused in Part between the capstan spindle and No.5 guide, if No.6 guide is raised excessively. Confirm that no wrinkles have been caused. (Fig. 4-25)

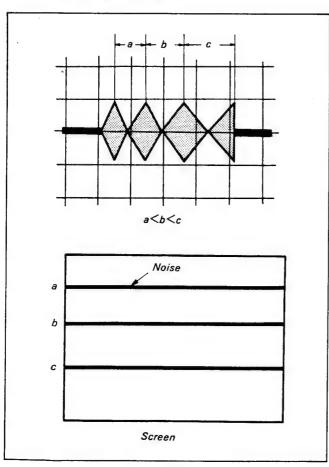


Fig. 4-23

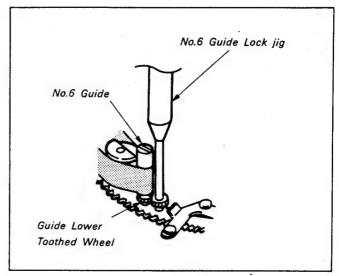


Fig. 4-24

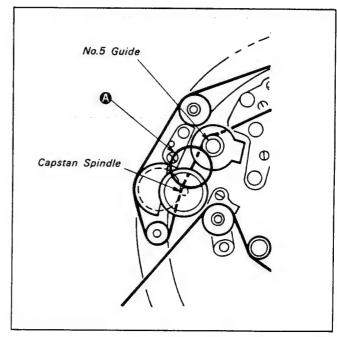


Fig. 4-25

#### 4-5-2. Checking rising edge

 Check that the RF waveform rises horizontally during playback after finishing loading, after CUE/REV, and during playing back after FF. If not, adjust as follows.

[Noise emits from the exit side (lower screen) with rising during playback after finishing loading]

(Fig. 4-26)

Check that the FWD back tension is not too low.

If too low:

Readjust as instructed in 3-21. FWD Back Tension Adjustment. If normal:

Rotate the azimuth screw of the pinch roller clockwise 15° at a time and adjust after rechecking the rising edge. (Fig. 4-27)

[Noise emits from the exit side (lower screen) with rising during playback after REV]

(Fig. 4-26)

Loosen the guide lower toothed wheel of No.6 guide using No.6 guide lock jig, rotate No.6 guide 90° counterclockwise to tighten the toothed wheel, then recheck the rising edge.

Note: Wrinkles may be caused in Part of Fig. 4-25, if No.6 guide is raised excessively at this time, between the capstan spindle and No.5 guide, so check that no wrinkles are caused.

[Noise emits from the exit side (lower screen) with rising during playing back after FF]

(Fig. 4-26)

Confirm that the FWD back tension is not too low.

If too low:

Readjust as required in 3-21. FWD Back Tension Adjustment. If normal:

Remote the azimuth screw of the pinch roller clockwise by 15° at a time and adjust after checking the rising edge. (Fig. 4-27)

Note: Be sure to check play rising after finishing loading in case an adjustment is made.

#### 4-5-3. Tape running check

In playback and REV modes, there should be no spaces and curl should be within 0.3 mm for No.1, 2 and 5 guides at No.1—No.6 guide flanges (Fig. 4-28). Check also that there is no space or curl at No.3, 4 and 6 guides.

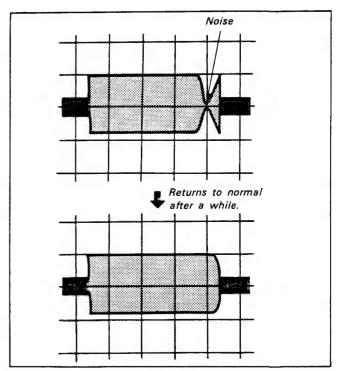


Fig. 4-26

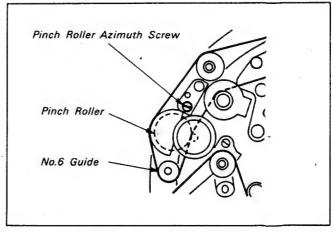


Fig. 4-27

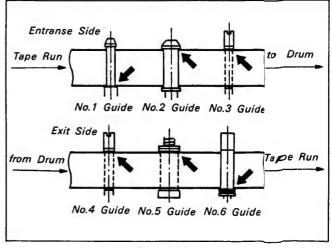


Fig. 4-28

#### 5. ELECTRICAL ADJUSTMENT

The following measuring instruments are needed for electrical adjustment.

#### [Equipment]

- 1) Monitor TV
- Oscilloscope, dual trace, band 10 MHz or wider, with delay mode (Use a 10:1 probe unless otherwise specified)
- 3) Frequency counter
- 4) Pattern generator
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion meter
- 9) Audio attenuator
- 10) Alignment tapes

Tracking adjustment (WR5-1C)

Parts code: 8-967-995-06

Video frequency response adjustment (WR5-2C)

Parts code: 8-967-995-16

Operation check (WR5-3CL)

Parts code: 8-967-995-36

Operation check (WR5-3CSP)

Parts code: 8-967-995-27

#### [Equipment Connection]

Unless otherwise specified, adjustment is made by connecting the measuring instruments as shown below.

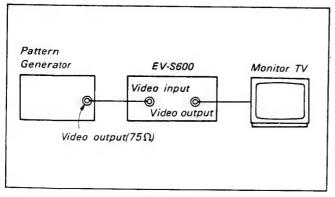


Fig. 5-1.

## Setting up during adjustment

Video signals output by a pattern generator are used as adjustment signals when making the electrical adjustments, and these video output signals should be within the required standard. Connect an oscilloscope to Pin ② of CN006 (VIDEO IN) on the VI-9A Board. Check that the amplitudes of video signal SYNC signals, picture portions, and burst signals are flat at approximately 0.3, 0.7, and 0.3V, respectively, and that the level ratio of the burst signal and "red" signal is 0.30:0.66. Fig. 5-2, shows video signals (colour bars) used in making the electrical adjustment.

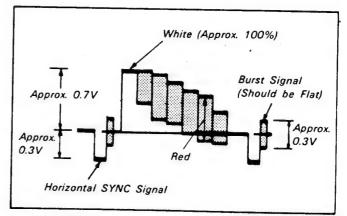


Fig. 5-2. Pattern Generator Colour Bar Signals

#### [Alignment tape]

Таре	Content	Use		
Tracking (WR5-1C)	Tracking  URS-1C)  1. Recording area: PCM — video 2. Recording content: CH2: 1 MHz linearity adjustment signal (CH1: 9 MHz)			
Video Frequency Response (WR5-2C)	1. Recording area: Video 2. Recording content: RF sweep 0 to 10 MHz 3. Marker: 1, 3.58, 5.5 and 7 MHz	Grequency respon adjustment		
Operation Check SP mode WR5-3CSP LP mode (WR5-3CL)	1. Recording area: Video 2. Recording content:  Video track  Video signals Colour bars 10 sec  Monoscope 8 sec  (Colour bars)	Operation check		
	Burst Signal  0.7V  0.3V  Horizontal SYNC Signal			
	Yellow Cyan Green Magenta Red Blue Black			
•	<ul> <li>Audio signals (AFM)  400 Hz 60% modulation</li> <li>PCM track (WR5-3CSP only)</li> <li>Audio signals (PCM)  1kHz 0dBs 10sec 20Hz −6dBs 2sec 400Hz −6dBs 4sec 14kHz −0.7dBs 2sec</li> </ul>			

## Input/output level and impedance of EUROCONNECTOR

Video input (Pin 20)

Input signals: 1 Vp-p, 75 $\Omega$  unbalanced, sync negative

Video output (Pin 19)

Output signals: 1 Vp-p,  $75\Omega$  unbalanced, sync negative

Audio input (Pin 6)

Input level: -6 dBs (0 dBs = 0.775 Vrms)

Input impedance: 10 kΩ or higher

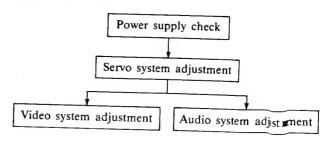
Audio output (Pins 1) and 3)

Regulated output: -6 dBs

Load impedance:  $1 k\Omega$  or lower

#### Adjustment Procedure

Adjust in the following sequence:



#### 5-1. POWER SUPPLY CHECK

Measure in E-E mode.

- REG 9V Check (PS-85A board)
   Voltage between CN209 Pin (3) (9V) and CN209 Pin (6)
   (GND) should be 9.0 ±0.1V DC.
- REG 5V Check (PS-85A board)
   Voltage between CN206 Pin (1) (5V) and CN206 Pin (2) (GND) should be 5.1 ±0.1V DC.
- 3) UN SWD 5V Check (PS-85A board)
  Voltage between CN207 Pin (6) (UN SWD 5V) and CN207
  Pin (1) (GND) should be 5.4 ±0.2V DC.
- 4) Back up 5V Check (PS-85A board)
   Voltage between CN207 Pin (7) (Back up 5V) and CN207
   Pin (1) (GND) should be 5.4 ±0.2V DC.
- 5) DRIVE 5V Check (PS-85A board)
  Voltage between CN207 Pin ② (DRIVE 5V) and CN207
  Pin ① (GND) should be 5.4 ±0.2V DC.
- 6) DRIVE 9V Check (PS-85A board)
  Voltage between CN208 Pin 4 (DRIVE 9V) and CN208
  Pin 3 (GND) should be 8.6 ±0.2V DC.
- 7) UN SWD 40V Check (PS-84A/B board)
  Voltage between CN103 Pin ② (UN SWD 40V) and
  CN102 Pin ③ (GND) should be 50 ±3V DC.
- 8) UN SWD -30V Check (PS-84A/B board)
  Voltage between CN103 Pin (1) (UN SWD -30V) and
  CN103 Pin (2) (GND) should be -28.5 ±1.5V DC.
- 9) AC 5.6V Check (PS-84A/B board)
  Voltage between CN101 Pin 3 and Pin 5 (AC 5.6V)
  should be 5.0 ± 0.3 Vrms.
- 10) UN SW 9V Check (PS-85A board)
  Voltage between CN210 Pin ② (UN SWD9V) and
  CN210 Pin ④ (GUD) should be 9.4V ± 0.3 VDC
- 11) AUDIO 6V Check (PS-85A board)

  Voltage between CN210 Pin ③ (AUDIO 6V) and

  CN210 Pin ④ (GND) should be 6.2V ± 0.3VDC
- 12) AUDIO-6V Check (PS-85A board)
  Voltage between CN210 Pin (3) (AUDIO-6V) and
  CN210 Pin (4) (GND) should be -6.2V ± 0.3VDC
- 13) UN SWD-9V Check (PS-85A board)
  Voltage between CN210 Pin (6) (UN SWD-9V) and
  CN210 Pin (4) (GND) should be -9.4V ± 0.3VDC
- 14) UN SWD 12.6V Check (PS-85A board)
  Voltage between CN204 Pin ① (UN SWD 12.6V)
  and CN204 Pin ② (GND) should be 12.6V ± 0.3VDC

#### [Solder side]

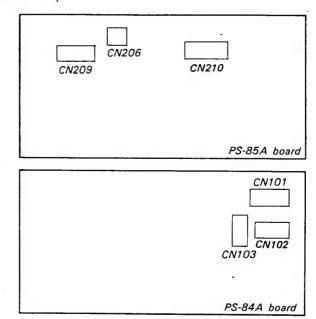


Fig. 5-3.

#### 5-2. SERVO SYSTEM ADJUSTMENT

**Note:** Perform the following checks before performing servo system adjustment. (SS-38F, SS-38G board)

1) Drum Bias Check

Check that IC201 Pin 2 DC voltage is 2.0  $\pm 1.0$ V in REC, SP/LP modes.

2) Drum Phase Lock Check

Make sure that it is within the range shown in Figure 5-4 in REC, SP/LP modes.

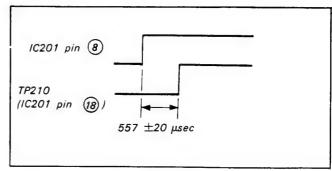


Fig. 5-4.

#### 5-2-1. Capstan DC Bias Adjustment (SS-38F, SS-38G Board)

Within the brackets [ ] indicates LP mode adjustment elements.

Mode: PLAYBACK

Tape: Optional

Frequency counter: TP204 (IC201 Pin 23): CAP FG)

Connection: Connect a 47 µF/6.3V power supply capacitor

between TP301 (IC301 Pin (1)) and GND.

(positive pole on TP301 side)

[Adjustment Procedure]

Adjust to 1339  $\pm 1$  Hz [669  $\pm 1$  Hz] with RV102 [RV202].

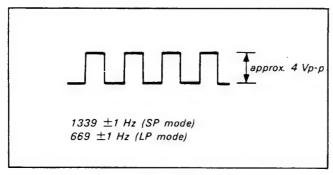


Fig. 5-5.

SS-38F board . . . . AEP Model. SS-38G board . . . . UK Model.

# 5-2-2. Switching Position Adjustment (SS-38F, SS-38G, VI-9AG Boards)

Mode: PLAYBACK

Alignment tape: Operation check (WR5-3CSP)

Oscilloscope CH1: VI-9AG Board Pin (19) of CN006 (VIDEO

OUT)

CH2: SS-38F, SS-38G Board Pin ® of IC201 (RF SW PULSE)

[Adjustment Procedure]

Adjust to 6.5  $\pm$ 0.3H (416  $\pm$ 20  $\mu$ sec) using RV203 on the SS-38F Board.

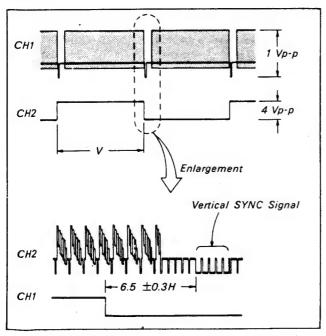


Fig. 5-6. Switching Position Adjustment

# 5-2-3. Tracking Adjustment (SS-38F, SS-38G, RP-25D Boards)

Mode: PLAYBACK
Tape: Self-recorded tape
SP/LP: SP mode
Input: LINE mode

Recorded with no signal input

Oscilloscope: RP-25D board CN6 Pin (5) (RF OUT)

[Adjustment Procedure]

Adjust so that RF output level is maximum with SS-38F,

SS-38G board RV301.

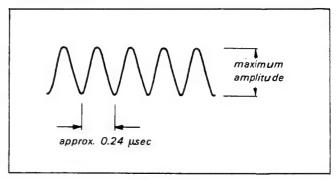


Fig. 5-7.

#### 5-2-4. SLOW Adjustment (SS-38F, SS-38G Board)

Mode: PLAYBACK PAUSE + SLOW

Tape: Self-recorded tape

Adjustment elements of SP mode are shown in parentheses.

[Adjustment procedure]

Adjust with RV402 [RV401] so that noise is not auclible on the monitor screen (Noise emitting on the screen becomes less than 1.4 at the top and bottom of the screen). Perform-confirmation of PB PAUSE — Continuous frame-by-frame forwarding (5 sec) — PB PAUSE three times after adjustment, and if the adjustment has become deviated, perform readjustment.

SS-38F board . . . . AEP Model. SS-38G boaed . . . . UK Model.

#### 5-3. VIDEO SYSTEM ADJUSTMENT

As a general rule, perform video adjustments in the order given below.

The colour video signal supplied from a pattern generator is used as the recording mode video system adjustment video input signal. Confirm that the colour burst signal and sync signal are within the specifications given in -2, set-up for adjustment.

#### [Adjustment order]

- 1) Playback Frequency Response Adjustment
- 2) Flying Erase Check
- 3) Xtal Oscillator fo Adjustment
- 4) SYNC AGC Pre-Adjustment
- 5) Y/C Separation Adjustment
- 6) Y Comb AGC Adjustment
- 7) SYNC AGC Adjustment
- 8) VIDEO OUT Level Adjustment
- 9) PB Y Level Adjustment
- 10) PB PAUSE Colour Level Adjustment
- 11) Y FM Carrier Frequency Adjustment
- 12) REC Y Level Adjustment
- 13) Y FM Deviation Adjustment
- 14) White Clip Adjustment
- 15) 375 fH VCO Adjustment
- 16) Chroma Emphasis fo Adjustment
- 17) Carrier Balance Adjustment
- 18) REC C Level Adjustment
- 19) REC Y ATF Level Adjustment
- 20) PCM ATF Level Adjustment
- 21) REC Y Recording Current Adjustment
- 22) REC PCM Recording Current Adjustment

# 5-3-1. Playback Frequency Response Adjustment (RP-25D Board)

#### • CH1, CH2

CH2 adjusting elements are shown in [ ].

Mode: PLAYBACK

Alignment tape: Frequency response adjustment (WR5-2C) Oscilloscope CH1: Pin ③ of CN006 [Pin ② of CN006] External trigger: Pin ① of CN006 [Pin ① of CN006]

Trigger slope: +, [-]

[Adjustment Procedure]

Adjust the ratio between the 3.58 and 5.5 MHz levels to 3:2 [4:3] using RV002 [RV001].

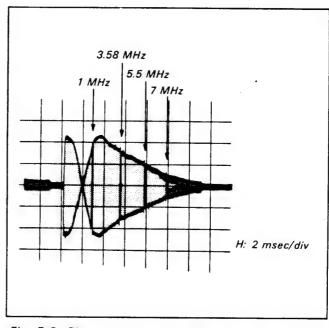


Fig. 5-8. Playback Frequency Response Adjustment

#### • CH1

Mode: PLAYBACK PAUSE

Alignment tape: For operation check (WR5-3CL)

[Adjustment Procedure]

Adjust RV200 so that there is no black or white trailing noise at the top of the monitor picture for a monoscope pattern.

#### 5-3-2. Flying Erase Check (RP-25D Board)

Mode: RECORD

Oscilloscope: Pin ① of CN005

[Checking Procedure]

The oscillation frequency should be 7 MHz or more and level,

7.5 Vp-p or more.

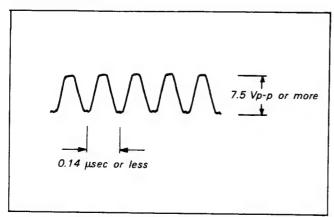


Fig. 5-9. Flying Erase Check

#### 5-3-3. X'tal Oscillator fo Adjustment (VI-9AG Board)

Mode: PLAYBACK

Alignment tape: For operation check (WR5-3CSP)

Frequency counter: Pin (8) of IC003

**Note:** Connect the frequency counter through a buffer with high impedance (approx.  $10 \text{ M}\Omega$ ) and low capacity (less

than 10 pF).

[Adjustment Procedure]

Adjust to 4.433619 ±50 Hz with CV200.

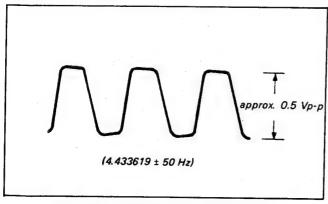


Fig. 5-10. X'tal Oscillator Adjustment

## 5-3-4. SYNC AGC Pre Adjustment (VI-9AG Board)

Mode: E-E

Input signals: Colour bar

Digital voltmeter or oscilloscope: Pin (12) of IC001

[Adjustment Procedure]

Adjust to 2.5 ±0.1 V dc with RV001

## 5-3-5. Y/C Separation Adjustment (VI-9AG Board)

Mode: E-E

Input signals: Colour bar Oscilloscope: Pin ② of IC002

Connection: Connect Q107 base to REG GND.

[Adjustment Procedure]

Adjust RV100 and LV100 alternately to minimize residual

chroma components.

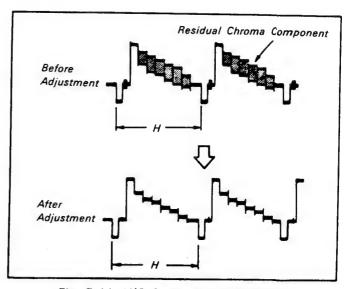


Fig. 5-11. Y/C Separation Adjustment

#### 5-3-6. Y Comb AGC Adjusmtent (VI-9AG Board)

Mode: E-E

Input signals: Colour bar Oscilloscope: Pin 3 of IC002

Connect a 22 k $\Omega$  resistor serially between Pin 3 of IC002 and 10:1 probe.

[Adjustment Procedure]

Minimize the amplitude with RV101.

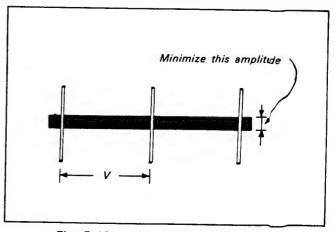


Fig. 5-12. Y Comb AGC Adjustmen

#### 5-3-7. SYNC AGC Adjustment (VI-9AG Board)

Mode: E-E

Input signals: Colour bar Oscilloscope: Emitter of Q007

VIDEO LINE OUT pin EUROCONNECTOR CN006 (9)

should be terminated with  $75\Omega$ .

[Adjustment Procedure]

Adjust to  $0.50 \pm 0.05$  Vp-p with RV001.

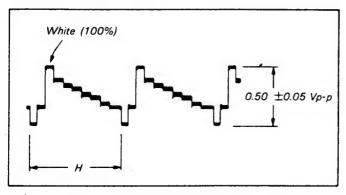


Fig. 5-13. SYNC AGC Adjustment

## 5-3-8. VIDEO OUT Level Adjustment (VI-9AG Board)

Mode: E-E

Input signals: Colour bar

Oscilloscope: Pin (19) of CN006 (VIDEO OUT)

VIDEO LINE OUT pin EUROCONNECTOR CN006 19

should be terminated with  $75\Omega$ .

[Adjustment Procedure]

Adjust to 1.00  $^{+0.05}_{-0}$  Vp-p with RV002.

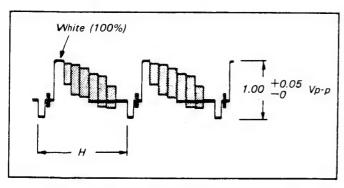


Fig. 5-14. VIDEO OUT Level Adjustment

#### 5-3-9. PB Y Level Adjustment (VI-9AG Board)

Mode: PLAYBACK

Alignment tape: For operation check, (WR5-3CSP) colour a bar portion

Oscilloscope: Pin 19 of CN006

VIDEO LINE OUT pin EUROCONNECTOR CN006 19 should be terminated with 75 $\Omega$ .

[Adjustment Procedure]

Adjust to  $1.00 \pm 0.05$  Vp-p with RV006.

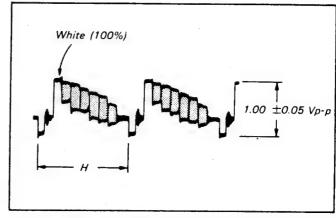


Fig. 5-15. PB Y Level Adjustment

## 5-3-10. PB PAUSE Colour Level Adjusment (VI-9AG Board)

Mode: PLAYBACK PAUSE

Alignment tape: For operation check. (WR5-3CSP) colour bar portion

Oscilloscope: Pin (2) of IC006

[Adjustment Procedure]

Adjust to  $500 \pm 25$  mVp-p with RV103.

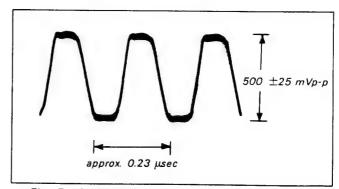


Fig. 5-16. PB PAUSE Colour Level Adjustment

#### 5-3-11. Y FM Carrier Frequency Adjustment (VI-9AG Board)

Mode: E-E

Input signal: None

Frequency counter: TP200 (Pin 6) of CN003)

[Adjustment Procedure]

Adjust to 4.20  $\pm 0.05$  MHz with RV003.

## 5-3-12. REC Y Level Adjustment (VI-9AG Board)

Mode: E-E

Input signal: None

Oscilloscope: TP200 (Pin 6 of CN003)

[Adjustment Procedure]

Adjust to  $0.46 \pm 0.01$  Vp-p with RV203.

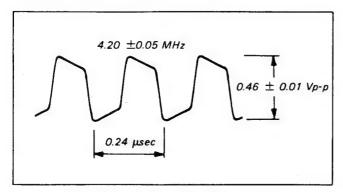


Fig. 5-17. REC Y Level Adjustment

#### 5-3-13. Y FM Deviation Adjustment (VI-9AG Board)

Adjustments of VIDEO OUT level, PB Y level, and Y FM

carrier frequency must be finished.

Mode: Self-recording and PLAYBACK

Input signals: Colour bar

Oscilloscope: Pin (19) of CN006

[Adjustment Procedure]

- 1) Record colour bar signals.
- 2) Play back recorded portions.
- 3) Check the playback output level. Standard: 1.00 ±0.05 Vp-p
- 4) Rotate RV005 as follows and repeat Steps 1) through 3) when the value does not satisfy the standard.

	RV005 rotation direction seen from solder side
Larger than standard value	Counterclockwise ( )
Smaller than standard value	Clockwise ( )

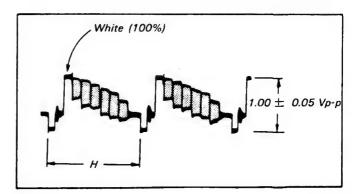


Fig. 5-18. Y FM Deviation Adjustment

#### 5-3-14. White Clip Adjustment (VI-9AG Board)

Mode: E-E

Input signal: Colour bar

Oscilloscope: TP003 (Pin 18 of IC001)

[Adjustment Procedure]

Adjust the peak of white (100%) portion to 235 - 240% with

RV004.

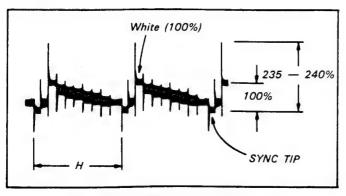


Fig. 5-19. White Clip Adjustment

## 5-3-15. 375 fH VCO Adjustment (VI-9AG Board)

Mode: E-E

Input signal: Colour bar

Digital voltmeter. Pin 20 of IC003

[Adjustment Procedure]

Adjust to  $3.00 \pm 0.05$ V DC with RV206.

#### 5-3-16. Chroma Emphasis fo Adjustment (VI-9AG Board)

Mode: E-E

Input signals: Colour bar Oscilloscope: Pin (8) of IC004

Connection: Conect the following two places with resistors

 $(47 k\Omega)$ .

Pin 41 of IC003 — Pin 23 of IC003 (REG 5V) Pin 41 of IC003 — Pin 37 of IC003 (GND)

[Adjustment Procedure]

Minimize the amplitude of the flat portions of chroma signals with FL200.

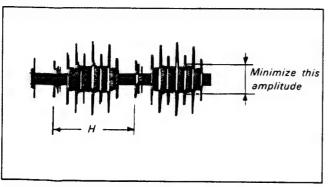


Fig. 5-20. Chroma Emphasis fo Adjustment

#### 5-3-17. Carrier Balance Adjustment (VI-9AG Board)

Mode: PLAYBACK

Alignment tape: For operation checking (WR5-3CL) colour bar

portion.

Oscilloscope: Pin 32 of IC003

[Adjustment Procedure]

Minimize the 5.17 MHz component with RV202.

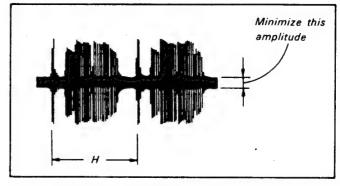


Fig. 5-21. Carrier Balance Adjustment

## 5-3-18. REC C Level Adjustment (VI-9AG Board)

Mode: E-E

Tape: MP type (CN010 Pin 3) must be 0V DC)

Input signal: Colour bar

Oscilloscope: CN003 Pin 6 (REC Y/C/AFM)

Connection: Connect the following three points with jumpers:

Q008 emitter (REC Y) — GND Q212 base (REC AFM) — GND IC007 Pin (1) (PILOT IN) — GND

[Adjustment Procedure]

Adjust red level to 84 ±9 mVp-p with RV201 (REC C ADJ).

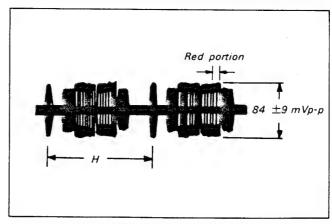


Fig. 5-22. REC C Level Adjustment

## 5-3-19. REC Y ATF Level Adjustment (VI-9AG Board)

Mode: E-E

Tape: MP type (CN010 Pin 3) must be 0V DC)

Input signal: Colour bar

Oscilloscope: If CN003 Pin 6 (REC Y/C AFM) signal level

is too small to read easily, do not use a 10:1 probe, but connect directly through a  $100\Omega$  resistor as shown in the diagram below.

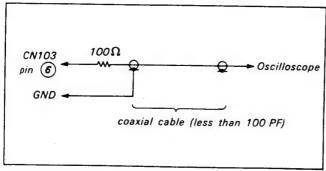


Fig. 5-23.

Connection: Connect the following three points with jumpers:

Q008 emitter (REC Y) — GND Q200 base (REC C) — GND Q212 base (REC AFM) — GND

[Adjustment Procedure]

Adjustment to 17 ±2 mVp-p with RV205.

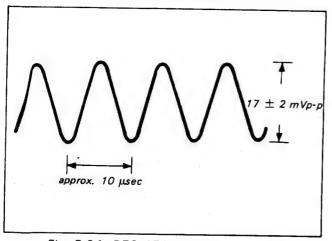


Fig. 5-24. REC ATF Level Adjustment

# 5-3-20. PCM ATF Level Adjustment (VI-9AG, SS-38F, SS-38G Boards)

Mode: E-E

Tape: MP type (CN010 Pin 3) must be 0V DC)

Input signal: Colour bar Input select: SIMUL Audio input signal: None

Oscilloscope: If CN003 Pin ③ (REC PCM) signal level is too

small to read easily, do not use a 10:1 probe, but connect directly through a  $100\Omega$  resistor as

shown in the diagram below.

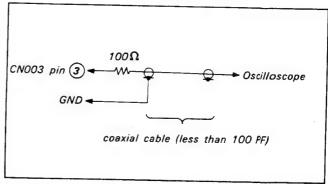


Fig. 5-25.

[Adjustment Procedure]

Adjust to 21 ±2 mVp-p with RV204 (PCM ATF).

Note: When there is a lot of noise, remove VI-9A board CN011 or SS-38F, SS-38G board CN111.

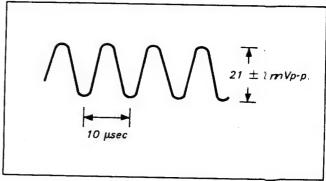


Fig. 5-26. PCM ATF Level Adjustment

SS-38F board . . . . AEP Model. SS-38G board . . . . UK Model.

# 5-3-21. REC Y Recording Current Adjustment (RP-25D, VI-9AG Boards)

Mode: RECORD

Tape: MP typ (VI-9A board CN010 pin 3 must be 0V DC)

Input signal: no signal

Oscilloscope: Connect the following two points on VI-9AG

board.

Q212 base (REC AFM) — GND IC007 Pin (1) (PILOT IN) — GND

[Adjustment Procedure]

Adjust to 200 mVp-p with RP-25D board RV3.

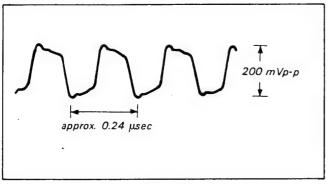


Fig. 5-27.

# 5-3-22. REC PCM Recording Current Adjustment (RP-25D, VI-9AG Boards)

Mode: RECORD

Tape: MP type (VI-9AG board CN010 Pin 3) must be 0V DC)

Input signal: Colour bar

Oscilloscope: RP-25B board IC1 Pin 37

Audio in put signal: None

Connection: Connect the following two points on VI-9AG board

with jumpers:

Q203 base (REC Y/C/AFM) — GND

IC007 Pin (1) (PILOT IN) - GND

[Adjustment Procedure]

Adjust RP-25D board IC1 Pin ③ REC PCM signal level to 200 mVp-p with RP-25D board RV5.

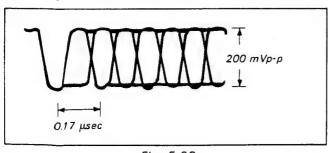


Fig. 5-28.

#### 5-4. AUDIO SYSTEM ADJUSTMENT

Use a colour bar signal as video signal input when performing adjustment

Connection of Audio Adjustment Measuring Instruments Connect the following audio measuring equipment in addition to the video measuring instruments.

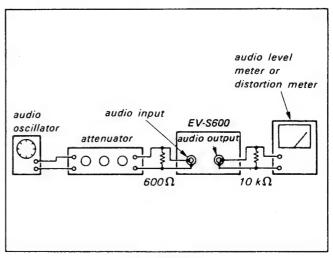


Fig. 5-29.

#### [Adjustment Order]

- 1) E-E Output Level Adjustment
- 2) AFM Carrier Frequency Adjustment
- 3) AFM Deviation Adjustment
- 4) AFM Carrier Level Adjustment
- 5) PCM Master Clock Free Oscillation Frequency Adjustment
- 6) PCM Playback VCO Free Oscillation Frequency Adjustment
- 7) PCM Playback Level Adjustment
- 8) PCM Offset Adjustment
- 9) PCM Recording Level Adjustment
- 10) MULTI PCM Frequency Adjustment
- 11) MULTI PCM Recording Level Adjustment
- 12) Overall Level Characteristics Check
- 13) Overall Frequency Characteristics
- 14) Overall Distortion Ratio Check
- 15) Overall S/N Check

#### 5-4-1. E-E Output Level Adjustment (PC-14B Board)

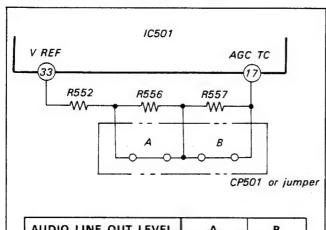
Mode: E-E

Audio input signal: 400 Hz. -12 dBs (Both L and R) Check Procedure:

- 1) 61 1 1 1 1 1 1 1 1 1
- 1) Check that AUDIO LINE OUT level is  $-10 \pm 1.5$  dBs.
- 2) If not, perform the following adjustment.

[Adjustment Procedure]

- 1) Remove CP501.
- 2) Short A (R556) and B (R557).
- 3) Measure AUDIO LINE OUT level\* and open A and/or B according to the tabl below.
  - \* Measure more than 30 seconds after POWER ON.



AUDIO LINE OUT LEVEL	Α	В
more than -10.8 dBs	short	short
-10.8 to -12.2 dBs	open	short
-12.2 to -13.5 dBs	short	open
less than -13.5 dBs	open	open

Fig. 5-30.

#### 5-4-2. AFM Carrier Frequency Adjustment (PC-14B Board)

Mode: RECORD (SP mode)
Audio input signal: no signal

Frequency counter: TP507 (CN603 Pin (1))

[Adjustment Procedure]

Adjust to  $1.500 \pm 0.003$  MHz with RV502.

## 5-4-3. AFM Diviation Adjustment (PC-14B Board)

Mode: PLAYBACK

Alignment tape: operation check (WR5-3CSP)

[Adjustment Procedure]

Adjust audio output level to  $-7.3 \pm 0.2$  dBs with RV501.

#### 5-4-4. AFM Carrier Level Adjustment (PC-14B Board)

Mode: RECORD (SP mode) Audio input signal: no signal

Oscilloscope: TP507 (CN501 Pin 1)

[Adjustment Procedure]

Adjust to 120 ±5 mVp-p with RV503.

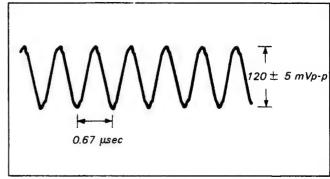


Fig. 5-31. AFM Carrier Level Adjustment

# 5-4-5. PCM Master Clock Free Oscillation Frequency Adjustment (PC-15B Board)

Mode: RECORD

Frequency counter. IC104 Pin ®

Connection: Connect between IC104 Pin (14) and +5V (CN102

Pin (1) with a jumper wire.

[Adjustment Procedure]

Adjust to 11.45 ±0.01 MHz with RV103 (M, CLOCK)

[Adjustment Method]

- 1) After the adjustment, remove the jumper win which is connected between IC104 Pin (4) and +5V (CN102 Pin (1)), and confirm that the frequency when connecting IC104 Pin (4) and GND is over 11.63 MHz.
- 2) The waveform of 60 Hz on IC104 Pin (14) should be in dormant state (constant duty).

# 5-4-6. PCM Playback VCO Free Oscillation Frequency Adjustment (PC-15B Board)

Mode: PLAYBACK

Tape: Non-signal recorded tape Frequency counter: IC103 Pin (8)

[Adjustment Procedure]

Connect IC103 Pin (1) to +5V (CN102 Pin (1)) and turn OFF the input AMP. (Return it to the original position after adjustment.)

Adjust to  $11.50 \pm 0.05$  MHz with R102.

Note: Be sure to perform the adjustment after an e lapse of over 1 mimute when the power supply is threed ON.

## 5-4-7. PCM Playback Level Adjustment (PC-14B Board)

Mode: PLAYBACK

Alignment tape: 400 Hz section of WR5 3CSP

Audio monitor. PCM [Adjustment procedure]

Adjust with RV603 so that the audio output level becomes -6.0

 $\pm 0.5$  dBs.

Note: If there is an output difference between Lch and Rch.

adjust to the center level.

#### 5-4-8. PCM Offset Adjustment (PC-14B Board)

Adjustment elements of Rch are shown in parentheses.

Mode: Self-recording (SP mode)

Audio input signal: 400 Hz + 3 dBs (Both L and R)

Oscilloscope: TP305 [TP405]

Set the recording level slide volume so that the audio output

level becomes +3 dBs. (Both L and R)

[Adjustment procedure]

- Playback the self recorded tape and confirm that the clip amount of the upper and the lower waveforms is equal.
- 2) In the event the clip amount is not equal, confirm the clip amount by turning RV301 [RV401] as shown below.

	Turnig direction of RV301 [RV401] as seen from the ports' side
In the event the upper clip	Clockwise ( ( )
amount is large	
In the event the lower clip	Counterclockwise (1)
amount is large	

**Note:** Be sure to perfor the adjustment alternately, since Lch and Rch effect each other.

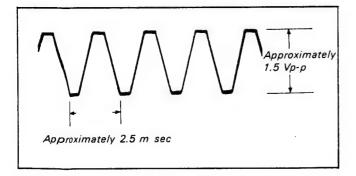


Fig. 5-32.

#### 5-4-9. PCM Recording Level Adjustment (PC-14B Board)

Mode: Self-recording (SP mode)

Tape: MP type

Audio input signal: 1 kHz, -10 dBs (Both L and R)

Audio monitor. PCM

Set the recording level slide volume so that the audio output

level becomes -10 dBs.

Adjustment elements of Rch are shown in parentheses.

[Rough adjustment]

Put into REC mode and adjust with RV304 [RV404] so that the levels of IC604 Pins (13) and (16) become approximately -- 10 dBs.

[Adjustment procedure]

Playback the self-recorded tape, and adjust with RV304 [RV404] so that the audio output level becomes ±0.5 dB in E-E mode.

**Note:** Be sure to perform the PCM playback level adjustment in 5-4-7 before performing this adjustment.

#### 5-4-10. MULTI PCM Frequency Adjustment (PC-15B Board)

Mode: RECORD Tape: MP type

Frequency counter (Should be connected to the output of an

oscilloscope): Q807 collector and IC802 Pin (5)

[Adjustment procedure]

Adjust Q807 collector with RV801 and IC802 Pin  $\odot$  with RV802 so that their frequencies become 230  $\pm$ 0.5 kHz, respectively.

# 5-4-11. MULTI PCM Recording Level Adjustment (PC-15B Board)

Mode: RECORD
Tape: Mp type

Oscilloscope: Q807 collector

[Adjust procedure]

Adjust to 2.7 ±0.1 Vp-p with RV803.

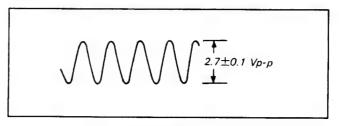


Fig. 5-33.

#### 5-4-12. PCM [AFM] Overall Level Characteristics Check

Mode: Self-recording

Tape: MP type

Audio input signal: 400 Hz, -10 dBs

The value of AFM is shown in parentheses.

[Checking method]

- 1) Record
- 2) Playback the recorded section.
- 3) Confirm that audio output level is  $-10 \pm 1.5 \,\mathrm{dBs}$  [-11  $\pm 2.5 \,\mathrm{dBs}$ ]

## 5-4-13. Overall Frequency Characteristics

[PCM]

Mode: Sekf-recording and playback (SP mode)

Tape: MY type

Audio input signal: -10 dBs (Both L and R) 20 Hz, 100 Hz,

400 Hz, 10 kHz and 14 kHz

Audio monitor: PCM

- 1) Record by setting recording level slide volume so that the audio output level becomes 400 kHz. -10 dBs.
- Playback the recorded sections and the individual output levels should be within the standard values.

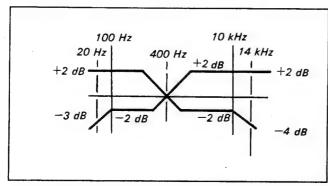


Fig. 5-34. PCM overall frequency characteristics

#### [AFM]

Mode: Self-recording and playback (SP mode)

Audio input signal: -20 dBs (Both L and R), 30 Hz, 400 Hz and

Tape: MP type

Audio monitor: STD

 Playback the recorded section and the individual output levels should be within the standard values.

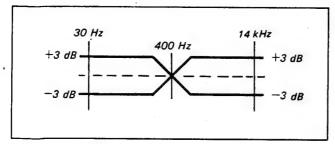


Fig. 3-35. AFM overall frequency characteristics

#### 5-4-14. Overall Distortion Ratio Check

[PCM]

Mode: Self-recording and playback

Tape: MP type

[Checking method]

- 1) Input 1 kHz, -10 dBs and adjust with the recording level slide volume so that the output becomes -10 dBs.
- 2) Record
- 3) Playback
- 4) Distortion ratio for both SP and LP modes becomes less than 0.35% (When filter is not used).
- 5) Input 1 kHz, 0 dBs and adjust with the recording level slide volume so that the output becomes 0 dBs.
- 6) Record
- 7) Playback
- 8) Distortion ratio for both SP and LP modes becomes less than 1.0% (When filter is not used).

#### [AFM]

Mode: Self-recording and playback

Tape: MP type

[Checking method]

- 1) Input 400 Hz, -10 dBs
- 2) Record
- 3) Playback
- 4) Be sure that the distortion ratio in both SP and LP modes is less than 0.5% (When the filter as shown in Fig. 5-36 is used), and less than 1.0% (When filter is not used).

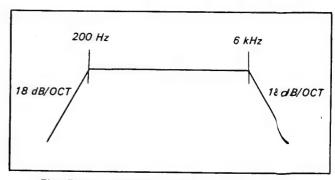


Fig. 5-36. Distortion ratio meausring fiter

#### 5-4-15. Overall S/N Check

[PCM] Mode: Self-recording and playback

Tape: MP type

Audio input signal: No signal (Short circuit AUDIO LINE IN

pin)

[Checking method]

Playback the recorded sections, and noise level should be less than -88 dBs (When using an \*A curve acoustic filter).

#### [AFM]

Mode: Self-recording and playback

Tape: MP type

Audio input signal: 400 Hz, -10 dBs and non-signal [Checking Method]

1) Record a 400 Hz, -10 dBs signal.

- Record in non-signal state (short circuit AUDIO LINE IN pin)
- 3) Playback the recorded sections and check that the level difference in both SP and LP modes between the signal (400 Hz section) and noise (non-signal section) is over 60 dB\*.
  - \* When using an A curve acoustic filter.

    (When not using an A curve acousic filter, it should be over 57 dBs in both SP and LP modes.)

#### 5-5. TUNER SECTION

# 5-5-1. TU AGC Adjustment (TA-29C Board UK model, TA-28A Board AEP model)

- 1) Receive broadcast TV signals in the highest contrast.
- Turn RV1 clockwise until snow (intensity-modulated display) noise appears on the TV screen.
- Slowly turn RV1 counterclockwise until the snow (intensity-modulated display) noise disappears.
- Receive signals of all channels in turn, and ensure that there is no cross modulation beat, image deformation or snow noise effect.

# 5-5-2. ATF Adjustment (TA-29C Board UK model, TA-28A Board AEP model)

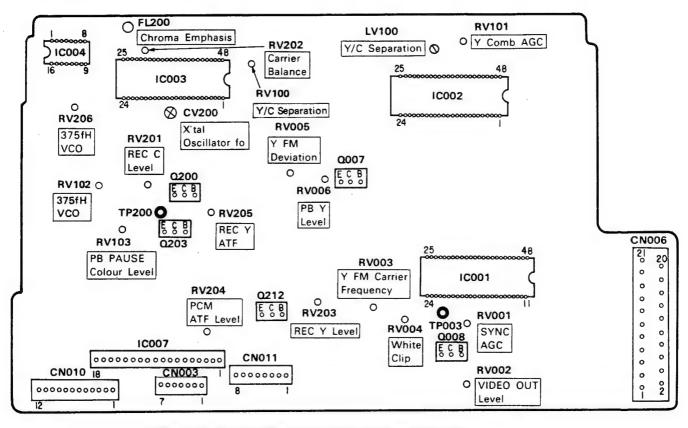
Adjustment elements of ES model are shown in parentheses.

- 1) Receive broadcast TV signals.
- 2) Turn off the AFT switch.
- Press the tuning button and set for the optimum state while observing the monitor TV screen. (There should be no beat).
- 4) Turn on the AFT switch.
- Adjust L8 [L5] to make sure that there is no beat or picture disturbance.

# 5-5-3. Separation Adjustment (TA-28A Board AEP model only)

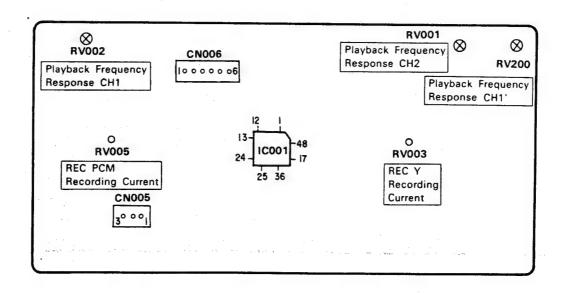
- 1) Set signal generator into stereo mode, and only Lch signal or Rch signal should be 400 Hz, 100% modulation.
- Connect an oscilloscope to CN9 Pin (1) (AUDIO L OUT) or Pin(2) (AUDIO R OUT).
- Adjust with RV2 so that Rch output becomes minimum when only Lch is modulated and Lch output becomes minimum when only Rch is modulated.

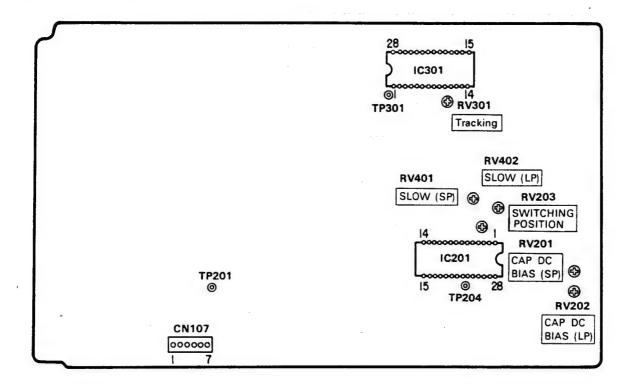
#### VI-9AG BOARD (SOLDER SIDE)



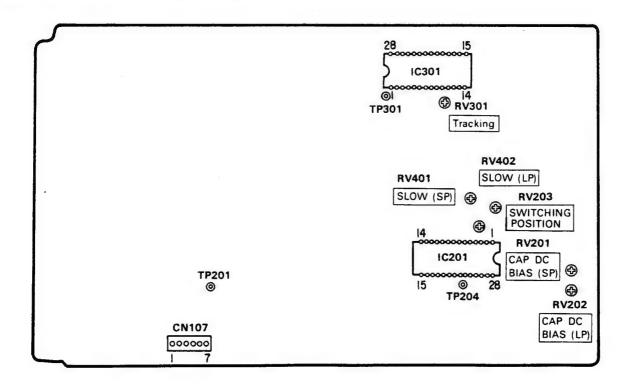
CV200, FL200 and LV100 can only be adjusted from the component side

#### RP-25D BOARD (SOLDER SIDE)

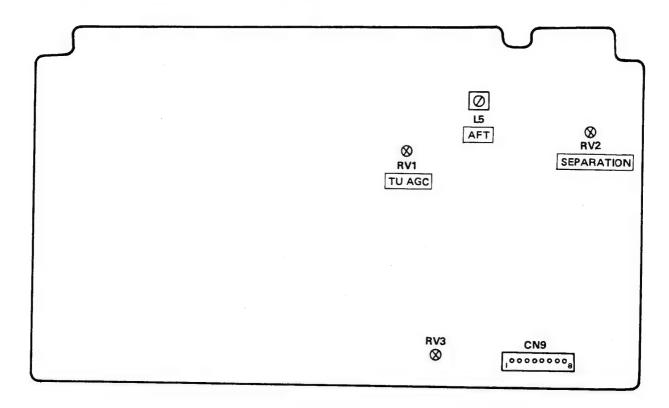




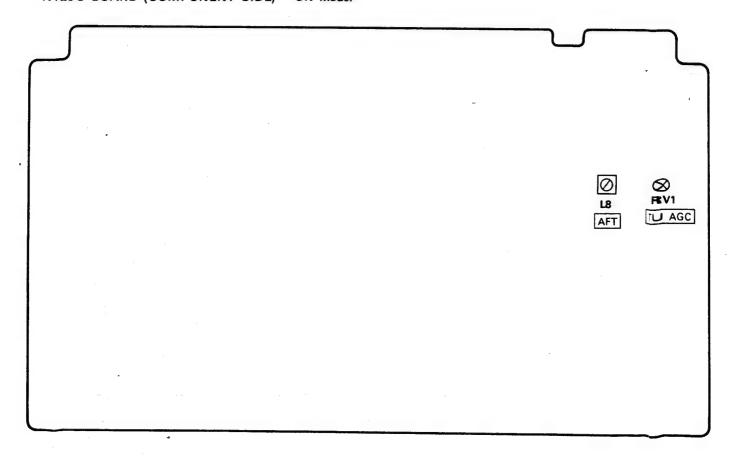
## SS-38G BOARD (COMPONENT SIDE) -UK Model-



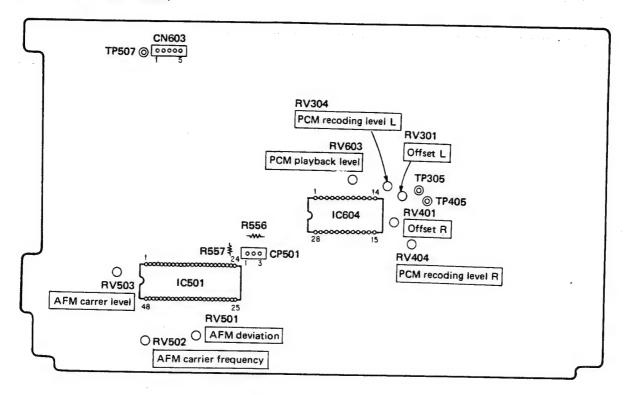
TA-28A BOARD (COMPONENT SIDE) - AEP Model -



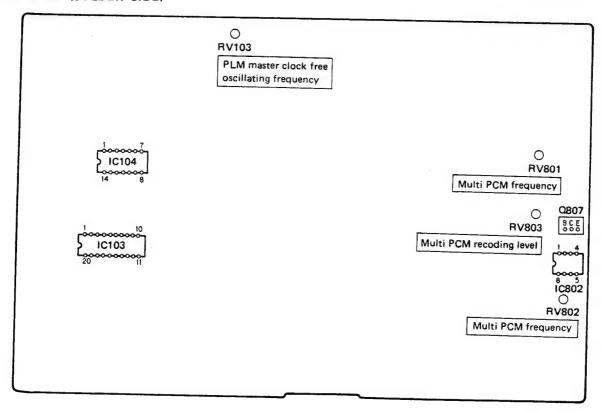
## TA-29C BOARD (COMPONENT SIDE) - UK Model -



## PC-14B BOARD (SOLDER SIDE)

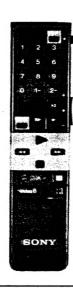


#### PC-15B BOARD (SOLDER SIDE)



# RMT-405

# SERVICE MANUAL



#### **SPECIFICATIONS**

#### **Remote Commander RMT-405**

Remote control system

Infrared control

Power requirements

3V dc, 2 IEC designation R6 (size

AA)

**Dimensions** 

Approx.  $45 \times 20 \times 175$  mm (w/h/d)

 $(13/4 \times 33/4 \times 7 \text{ in.})$ 

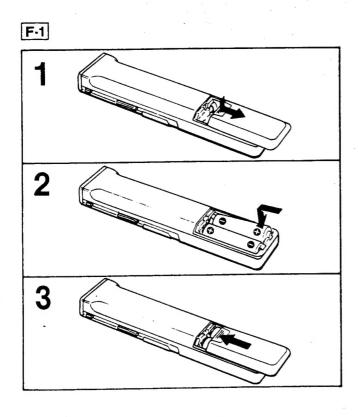
Weight

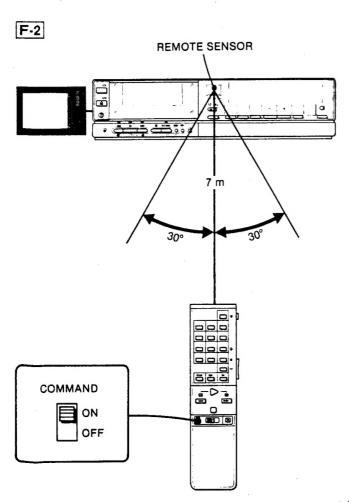
incl. projecting parts and controls Approx. 66 g (2.3 oz)

without batteries



#### 1. REMOTE COMMANDER SET-UP





## Battery insertion F-1

- 1 Open the lid.
- 2 Insert two IEC designation R6 (size AA) batteries with correct polarity.
- 3 Close the lid.

#### **Battery life**

In normal operation, batteries will last for about six months. If the range of the Remote Commander becomes noticeably shorter, replace the batteries with new ones. When the batteries are exhausted, the indicator will not light when the buttons on the Commander are pressed.

If the Remote Commander is not to be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

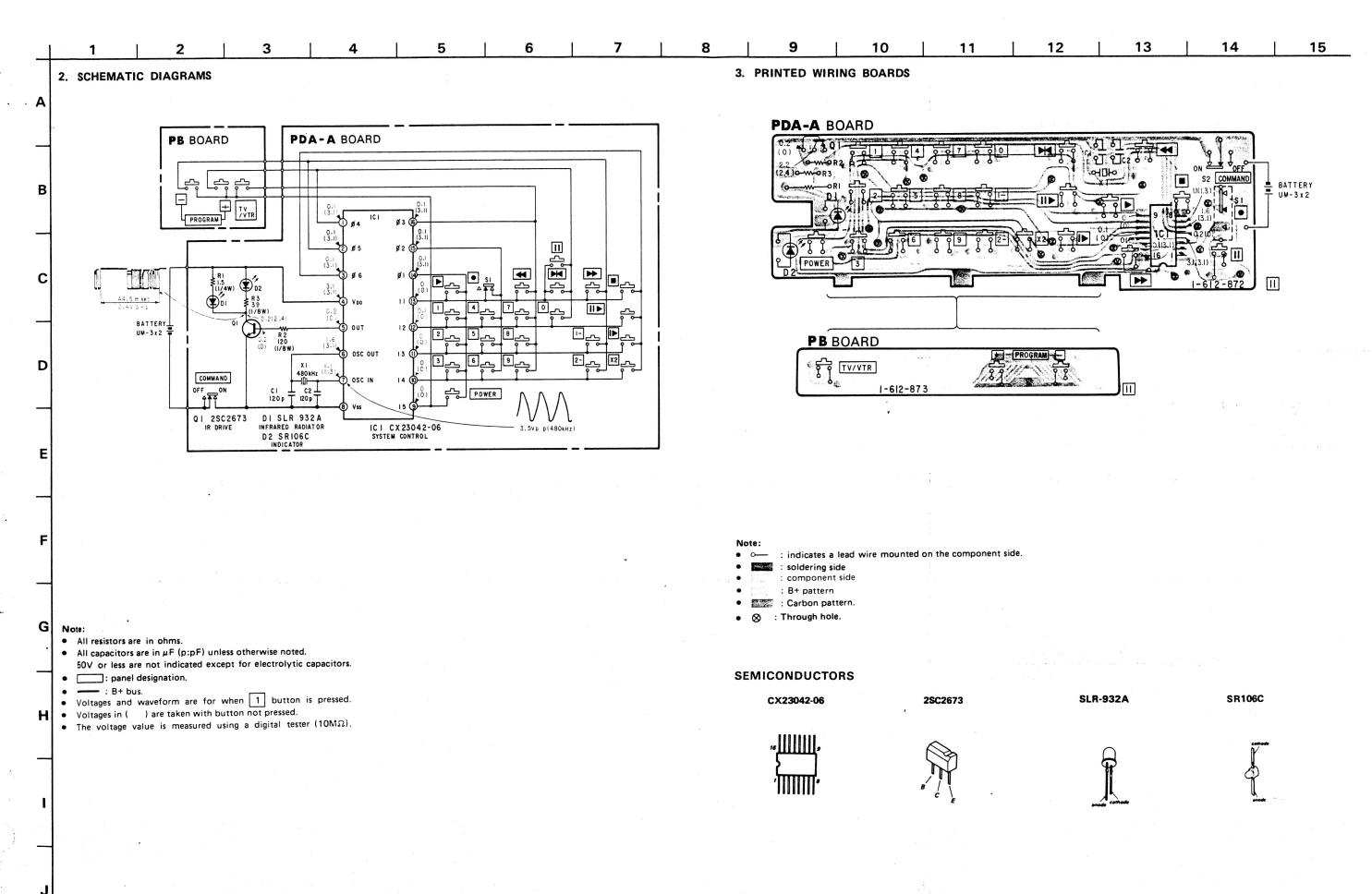
#### Notes

- There should be no obstacles between the Commander and the REMOTE SENSOR.
- Operable range is limited. F-2
   Distance: Approx. 7 meters (23 feet) from the RE-MOTE SENSOR

Angle: Approx. ±30 degrees from the centre. The shorter the distance between the Commander and the EV-S700ES/UB, the wider the angle within which the EV-S700ES/UB can be controlled.

Set the COMMAND switch to ON to operate the Commander.

Set to OFF when the Commander is not in use.

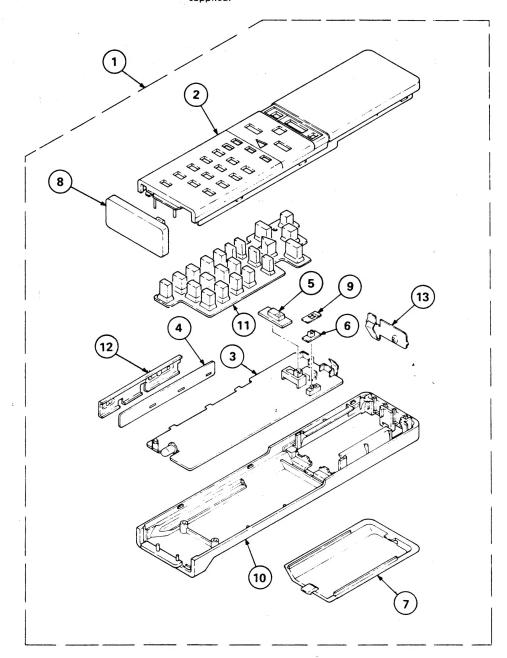


#### 4. EXPLODED VIEW

#### NOTE:

- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1 2 3		COMMANDER ASSY (RMT-405) CASE (UPPER), COMMANDER PDA-A BOARD	2-12	8 9 10	2-387-113-11 2-387-123-11	PANEL, COMMANDER (FRONT) PLATE, COLOR CASE (LOWER), COMMANDER	
4	*1-612-873-11	PB BOARD		11		RUBBER (B), CONTACT	
5	2-387-101-01	BUTTON, RECORDING	1	12		RUBBER (A), CONTACT	
6	2-387-102-01	BUTTON, SLIDE		13	4-350-925-00	TERMINAL (C), BATTERY	
7	2-387-105-11	COVER, BATTERY					

#### 5. ELECTRICAL PARTS LIST

#### NOTE:

The components identified by shading and mark  $\triangle$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

#### RESISTORS

- All resistors are in ohms
- F : nonflammable

 Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

#### CAPACITORS

MF : μF, PF : μμF

#### COILS

• MMH : mH, UH : μH

Ref.No Part No. *1-612-872-11	Description PDA-A BOARD	Remark				
2-387-103-01 2-387-104-01	TERMINAL (A), BATTERY TERMINAL (B), BATTERY					
CAPACITOR						
C1	CERAMIC 120PF 10% CERAMIC 120PF 10%	50V 50V				
DIG	DDE					
	DIODE SLR-932A DIODE SR106C					
<u>IC</u>						
IC1 8-759-916-10	IC CX23042-06					
TRA	TRANSISTOR					
01 8-729-967-32	TRANSISTOR 2SC2673					
RES	SISTOR					
R1 1-247-073-00 R2 1-247-809-00 R3 1-247-797-00						
SW	тсн					
S1 1-554-364-00 S2 1-553-977-00	SWITCH, SLIDE SWITCH, SLIDE					
CR	CRYSTAL					
X1 1-527-476-00	OSCILLATOR, CERAMIC					
*1-612-873-11	PB BOARD *******					